

MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL
RAILROAD AND FINANCIAL NEWSPAPER.

THE SOUTH IN AMERICAN COMMERCE

Analysis of the complete figures of American exports in the fiscal year just closed compared with those of the preceding year reveals the importance of the South in the outward movement of merchandise as follows:

Ports.	Increased Value, Exports.	Increase Per Cent.
All.....	\$93,272,475	6.68
Southern.....	44,040,529	9.08
North Atlantic	44,313,195	6.04
All others.....	4,918,751	2.78

THE FULL TABLE OF CONTENTS WILL BE FOUND ON PAGE 66.

VOL. XL.
No. 4.

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Baltimore, August 15, 1901.



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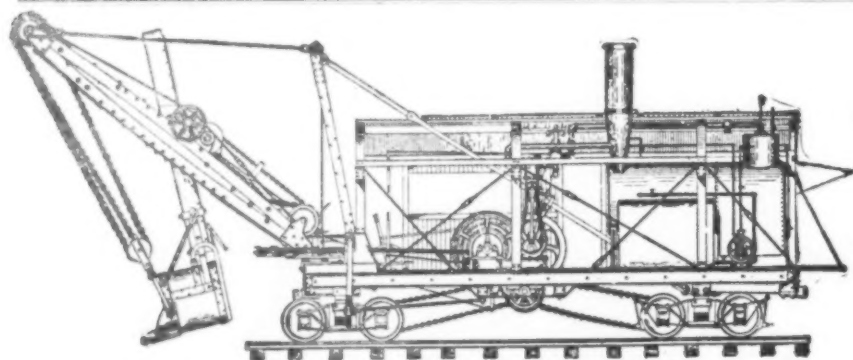
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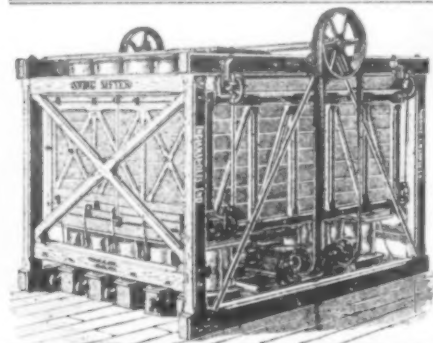
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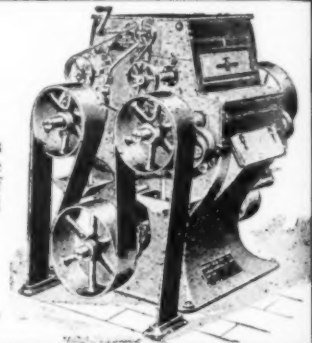
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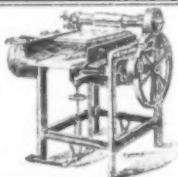


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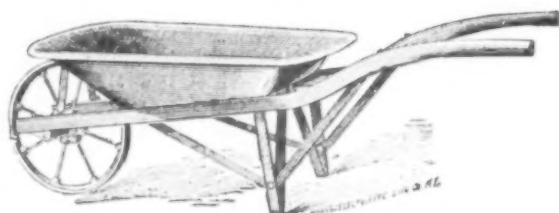
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Classified Index of Advertisers.

FOR ALPHABETICAL INDEX See Page 29.

- Acid Chambers.**
Caroline Iron Works, Baltimore, Md.
Robertson Mfg. Co., James, Baltimore, Md.
Valk & Murdoch Iron Wks., Charleston, S. C.
- Accountants.**
The Audit Co. of New York, New York, N. Y.
- Accumulators.**
Bashnell Press Co., G. H., Thompsonville, Conn.
Watson-Stillman Co., New York, N. Y.
Wood, R. D., & Co., Philadelphia, Pa.
- Adding Machines.**
American Arithmometer Co., St. Louis, Mo.
Agent. (Manufacturers and Producers.)
Morrison & Kindervater, Richmond, Va.
Phillips, Edward W., Baltimore, Md.
- Agricultural Implements.**
Farquhar Co., Ltd., A. B., York, Pa.
Hench & Dromgold, York, Pa.
- Agricultural Shapes.**
American Steel Hoop Co., New York, N. Y.
- Air Brakes.**
Standard Traction Brake Co., New York, N. Y.
- Air Compressors.**
Clayton Air Compressor Works, New York, N. Y.
Hardie-Tynes Fdy. & Mch. Co., Birmingham, Ala.
Ingersoll-Sergeant Drill Co., New York, N. Y.
McKernan Drill Co., New York, N. Y.
Rand Drill Co., New York, N. Y.
Smith Machine Co., H. B., Smithville, N. J.
Sulwell-Bierce & Smith-Vaile Co., Dayton, O.
Sullivan Machinery Co., Chicago, Ill.
- Anti-Friction Metals.**
Bailey-Lebby Co., Charleston, S. C.
Hiers, Theo., & Son, St. Louis, Mo.
Humboldt Metal Works, South Somerville, N. J.
Magnolia Metal Co., New York, N. Y.
Merchant & Co., Inc., Philadelphia, Pa.
Ryan, J. J., & Co., Chicago, Ill.
- Antimony.**
Hiers, Theo., & Son, St. Louis, Mo.
Magnolia Metal Co., New York, N. Y.
Ryan, J. J., & Co., Chicago, Ill.
- Architects.**
Bryan, A. J., & Co., Memphis, Tenn.
Makepeace, C. R., & Co., Providence, R. I.
Milburn, Frank F., Columbia, S. C.
Fraser, C. A. M., & Co., Providence, R. I.
Simpson, A. D., Birmingham, Ala.
Walter & Legare, Columbia, S. C.
Wheeler, McMichael & Co., Charlotte, N. C.
- Architectural Iron Works.**
American Bridge Co., New York, N. Y.
American Machine & Foundry Co., Hanover, Pa.
Belmont Iron Works, Philadelphia, Pa.
Eureka Supply Co., Chattanooga, Tenn.
Lombard Iron Works & Supply Co., Augusta, Ga.
Lykes, John D., Birmingham, Ala.
Sanders Mfg. Co., Dalton, Ga.
Schreiber, L., & Sons Co., The, Cincinnati, O.
Virginia Bridge & Iron Co., Roanoke, Va.
- Asbestos.**
Johns, H. W., Mfg. Co., New York, N. Y.
Kearney & Mattison Co., Ambler, Pa.
Southern Asbestos Mfg. Co., Richmond, Va.
- Attorneys.**
Corder, Edward, Spencer, W. Va.
Hanlon, Thos. F., Washington, D. C.
- Babbitt Metal.** [See Anti-Friction Metal.]
- Bags, Rope and Twine.**
American Mfg. Co., New York City.
Bailey, John T., & Co., Philadelphia, Pa.
- Bagging Machinery.** (Automatic.)
N. E. Automatic Weighing Mch. Co., Boston, Mass.
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Baker, Edgar & Co., Baltimore, Md.
Continental Trust Co., Baltimore, Md.
Hambleton & Co., Baltimore, Md.
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Thomson, Edw. H., & Sons, Baltimore, Md.
Williams, John L., & Sons, Richmond, Va.
- Bar Iron and Steel.**
American Iron & Steel Mfg. Co., Lebanon, Pa.
American Steel Hoop Co., New York, N. Y.
- Bellows.** (Molder and Blacksmith.)
Paxson Co., J. W., Philadelphia, Pa.
- Belting.**
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Bailey-Lebby Co., Charleston, S. C.
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Cameron & Barkley Co., Charleston, S. C.
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Dodge Mfg. Co., Mishawaka, Ind.
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Aultman Co., The, Canton, O.
Caldwell, H. W., & Son Co., Chicago, Ill.
Jeffrey Manufacturing Co., Columbus, O.
Link-Belt Engineering Co., Nicetown (Phila.), Pa.
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DuBois Iron Works, DuBois, Pa.
Eting, Edw., Philadelphia, Pa.
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Gibbs, W. H., & Co., Columbia, S. C.
Hammond Iron Works, Warren, Pa.
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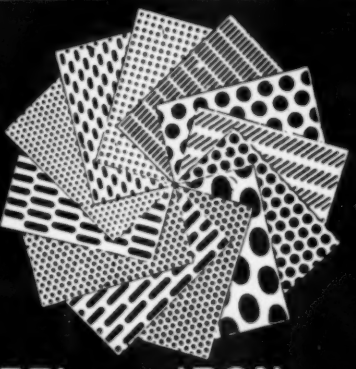
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Classified Index of Advertisers. For ALPHABETICAL INDEX See Page 29.

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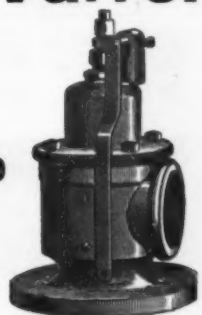
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Classified Index of Advertisers.

FOR ALPHABETICAL INDEX See Page 29.

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Kentucky Electrical Co., Owensboro, Ky.
New Jersey Foundry & Machine Co., Plainfield, N. J.
Northern Electrical Mfg. Co., Madison, Wis.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Smethurst & Allen, Philadelphia, Pa.
Smith, Samuel J., & Co., Charlotte, N. C.
Sprague Electric Co., New York, N. Y.
Stanley Electric Mfg. Co., Pittsfield, Mass.
Triumph Electric Co., Cincinnati, O.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

Eave Trough Hangers, etc.
Heartley Mch. Variety Iron & Tool Works, Toledo, O.

Electric Contractors.
Alexander, Jr., S. B. Co., Charlotte, N. C.
Jenks, W. H., Richmond, Va.
Northern Elec. Mfg. Co., Madison, Wis.
Stanley Elec. Mfg. Co., Pittsfield, Mass.
Weatherford & Hilderbrand, Memphis, Tenn.

Electrical Instruments.
Bunnell, J. H., & Co., New York, N. Y.
Northern Electric Supply Co., Madison, Wis.
Stanley Electric Mfg. Co., Pittsfield, Mass.

Electric-Light and Power Plants.
Alexander, Jr., Co., S. B., Charlotte, N. C.
Commercial Electric Co., Indianapolis, Ind.
Crocker-Wheeler Co., Ampere, N. J.
General Electric Co., Schenectady, N. Y.
General Electric Co., Light Co., New York, N. Y.
Gregory Electric Co., Chicago, Ill.
N. J. Foundry & Machine Co., Plainfield, N. J.
Northern Electrical Mfg. Co., Madison, Wis.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Smethurst & Allen, Philadelphia, Pa.
Sprague Electric Co., New York, N. Y.
Stanley Electric Mfg. Co., Pittsfield, Mass.
Triumph Electric Co., Cincinnati, O.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

Electric Railway Equipment.
Alexander, Jr., Co., S. B., Charlotte, N. C.
General Electric Co., Schenectady, N. Y.
Northern Electrical Mfg. Co., Madison, Wis.
Sprague Electric Co., New York, N. Y.
Stanley Electric Mfg. Co., Pittsfield, Mass.
Triumph Electric Co., Cincinnati, O.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
Western Electrical Supply Co., St. Louis, Mo.

Electrical Repairs.
Alexander, Jr., Co., S. B., Charlotte, N. C.
General Incandescent Arc Light Co., New York, N. Y.
Gregory Electric Co., Chicago, Ill.
Guarantee Electric Co., Chicago, Ill.
Kentucky Electrical Co., Owensboro, Ky.
Smith, Samuel J., & Co., Charlotte, N. C.
Tower-Binford Elec. & Mfg. Co., Richmond, Va.

Electrical Supplies.
Alexander, Jr., Co., S. B., Charlotte, N. C.
Bunnell, J. H., & Co., New York, N. Y.
General Electric Co., Schenectady, N. Y.
Gregory Electric Co., Chicago, Ill.
Guarantee Electric Co., Chicago, Ill.
Jenks, W. H., Richmond, Va.
Johns Mfg. Co., H. W., New York, N. Y.
Kentucky Electrical Co., Owensboro, Ky.
Northern Electrical Mfg. Co., Madison, Wis.
Smith, Samuel J., & Co., Charlotte, N. C.
Stanley Electric Mfg. Co., Pittsfield, Mass.
Sturtevant Co., B. F., Boston, Mass.
Triumph Electric Co., Cincinnati, O.
Western Electrical Supply Co., St. Louis, Mo.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

Electric Locomotives. (See Locomotives.)

Electric Trucks.
Baldwin Locomotive Works, Philadelphia, Pa.

Electrotypers.
American Type Founders Co., Baltimore, Md.
Spencer & Hall, Baltimore, Md.

Elevators.
Albro-Clem Elevator Co., Philadelphia, Pa.
Aultman Co., The, Canton, O.
Bartlett, Hayward & Co., Baltimore, Md.
Bates, James, Sons, Baltimore, Md.
Craig Ridgway Co., Coatesville, Pa.
Curran, Jas. H., Elevator Co., Cincinnati, O.
Easton & Prince Co., Chicago, Ill.
Fairmount Machine Co., Philadelphia, Pa.
Frank Le Roy & Co., Baltimore, Md.
Link-Belt Engineering Co., Philadelphia, Pa.
Maryland Foundry & Machine Co., Baltimore, Md.
Morse, Williams & Co., Philadelphia, Pa.
Parkhurst Bros. & Co., Indianapolis, Ind.
Park Mfg. Co., Charlotte, N. C.
Spedel, J. G., Reading, Pa.
Union Elevator & Machine Co., Chicago, Ill.
Westbrooks, J. B., Fdry. & Mch. Co., Danville, Va.

Elevator Buckets.
Caldwell, H. W., & Son Co., Chicago, Ill.
Clark Co., The, W. J., Salem, O.
Dodge Mfg. Co., Mishawaka, Ind.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Engineering Co., Philadelphia, Pa.
Tate, Jones & Co., Pittsburg, Pa.

Elevator Enclosures and Cabs.
Balderson, H., & Son, Baltimore, Md.
Bolles, J. E., Iron & Wire Works, Detroit, Mich.
Dow Wire Work Co., Louisville, Ky.
Dufur & Co., Baltimore, Md.
Ludlow-Saylor Wire Co., The, St. Louis, Mo.
Meyers Mfg. Co., The, Fred J., Hamilton, O.

Elevator Ropes. [See Wire Rope.]

Emery.
Carborundum Co., The, Niagara Falls, N. Y.
Scranton Corundum & Emery Wheel Co., Scranton, Pa.
Tanite Co., The, Stroudsburg, Pa.

Emery Wheels. [See Grinding and Polishing Machinery.]

Engineers. (Electric, Consulting, Contracting Mechanical and Mining)
Alber & Byrne, Birmingham, Ala.
Alcott, T. C., & Son, Mount Holly, N. J.
Adams, Henry, Baltimore, Md.
American Bridge Co., New York, N. Y.
Blanton, Jr., E. A., Philadelphia, Pa.
Collier & Brown, Atlanta, Ga.
Erikson, Edw. E., Pittsburg, Pa.

Given, Wm. M., Birmingham, Ala.
Hall, Charles A., M. E., Mobile, Ala.
Hutton Engineering Co., Lexington, Va.
Kennedy, Walter, Pittsburgh, Pa.
Lederle, Frank, Atlanta, Ga.
McRae, M. W., Atlanta, Ga.
Morrison & Kindervater, Richmond, Va.
Nicol, Baur & Foster, Mobile, Ala.
Northern Elec. Mfg. Co., Madison, Wis.
Perry, Nathaniel V., Atlanta, Ga.
Pratt & Boltwood, Chapel Hill, N. C.
Pratt Laboratory, N. F., Atlanta, Ga.
Robinson Contracting Co., Geo. A., Mobile, Ala.
Stanley Elec. Mfg. Co., Pittsfield, Mass.
Thorburn Reid, New York, N. Y.
Virginia Bridge & Iron Co., Roanoke, Va.
Weatherford & Hilderbrand, Memphis, Tenn.
Witherow, Jas. P., Pittsburg, Pa.

Engines.
Alexander, Jr., Co., S. B., Charlotte, N. C.
American Blower Co., Detroit, Mich.
Atlas Engine Works, Indianapolis, Ind.
Ball Engine Co., The, Erie, Pa.
Ball & Wood Co., New York, N. Y.
Boston Blower Co., Hyde Park, Mass.
Brownell, The, & Co., Dayton, O.
Buffalo Forge Co., Buffalo, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Chicago House Wrecking Co., Chicago, Ill.
Farquhar Co., A. B., Ltd., York, Pa.
Frisk Co., Waynesboro, Pa.
Gibbs, W. H., & Co., Columbia, S. C.
Greenwald Co., I. & E., Cincinnati, O.
Hardie-Tynes Fdy. & Mch. Co., Birmingham, Ala.
Harrisburg Fdry & Mch. Works, Harrisburg, Pa.
High Point Machine Works, High Point, N. C.
Hill, Wm. E., & Co., Kalamazoo, Mich.
International Power Co., Providence, R. I.
Leffel, James, & Co., Springfield, O.
Lidgerwood Mfg. Co., New York, N. Y.
Lombard Iron Works & Supply Co., Atlanta, Ga.
McClave, Hamilton & Rimmer, New York, N. Y.
McIntosh, Seymour & Co., New York, N. Y.
Murray Iron Works Co., Burlington, Iowa.
Mecklenburg Iron Works, Charlotte, N. C.
Newport News Shipb'g & Dry Dock Co., N. News, Va.
Phillips, Edward W., Baltimore, Md.
Phoenix Iron Works Co., Meadville, Pa.
Remington Machine Co., Wilmington, Del.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Schodels, J. S., Sons Co., Macon, Ga.
Smith-Courtesy Co., Richmond, Va.
Southern Eng. & Boiler Works, Jackson, Tenn.
Southwest Foundry & Machine Co., Philadelphia, Pa.
St. Louis Iron & Machine Works, St. Louis, Mo.
Struthers, Wells & Co., Warren, Pa.
Sturtevant Co., B. F., Boston, Mass.
Union Iron Works Co., Selma, Ala.
Valk & Murdoch Iron Works, Charleston, S. C.
Valley Iron Works, Williamsport, Pa.
Viller Mfg. Co., Milwaukee, Wis.
Wetherill, Robert, & Co., Chester, Pa.
Westinghouse Machine Co., Pittsburg, Pa.
York Mfg. Co., York, Pa.

Engines. (Gas and Gasoline.)
Blakeslee Mfg. Co., The, Birmingham, Ala.
Columbus Machine Co., Columbus, O.
Cornell Machine Co., Chicago, Ill.
Fairbanks Co., Baltimore, Md.
Olds Motor Works, Detroit, Mich.
Otto Gas Engine Works, Philadelphia, Pa.
Struthers, Wells & Co., Warren, Pa.
Westinghouse Machine Co., Pittsburg, Pa.

Engines. (Oil.)
Aultman Co., The, Canton, O.

Engravers.
Alpha-Photo Engraver Co., Baltimore, Md.
Baltimore Engraving Co., Baltimore, Md.

Exhaust Heads.
Bonar James, & Co., Pittsburg, Pa.
Burt Mfg. Co., Akron, O.
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.

Exhausters.
Cornell, J. B. & J. M., New York, N. Y.

Expansion Bolts.
New Jersey Foundry & Machine Co., Plainfield, N. J.

Fans. (Electric Ceiling, Etc.)
Paragon Fan & Motor Co., New York, N. Y.

Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

Fans. (Hand.)
Frantz-Gage Mfg. Co., The, Chicago, Ill.

Feed-Water Heaters and Purifiers.
Berryman, Jas., Philadelphia, Pa.
Bonar James, & Co., Pittsburg, Pa.
Gem City Boiler Co., Dayton, O.
Green Fuel Economizer Co., Mattawan, N. Y.
Harrison Safety Boiler Works, Philadelphia, Pa.
Hawley Down Draft Furnace Co., The, Atlanta, Ga.
Kelley, Benj. F., & Son, New York, N. Y.
National Pipe Bending Co., New Haven, Conn.
Park Mfg. Co., Charlotte, N. C.
Patterson, Frank L., New York, N. Y.
Phillips, E. W., Baltimore, Md.
Phoenix Iron Works Co., Meadville, Pa.
Scaife, Wm. B., & Son, Pittsburg, Pa.
Stillwell-Bierce & Smith-Valle Co., Dayton, O.
Taunton Locomotive Mfg. Co., The, Taunton, Mass.
Warren Webster Co., Camden, N. J.

Feltting. (Hair.)
Baeder, Adamson & Co., Philadelphia, Pa.

Fencing. (Iron and Wire.)
Balderson, H., & Son, Baltimore, Md.
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Burger Iron & Wire Works Co., Akron, O.
Chandler Fence Co., Baltimore, Md.
Dow Wire Works Co., Louisville, Ky.
Dufur & Co., Baltimore, Md.
Eureka Supply Co., Chattanooga, Tenn.
Ludlow-Saylor Wire Co., St. Louis, Mo.
New Jersey Wire Cloth Co., Trenton, N. J.

Fertilizer Machinery. (See Phosphate Mch.)

Files.
Barnett Co., G. & H., Philadelphia, Pa.
Besly, Chas. H., & Co., Chicago, Ill.
Nicholson File Work, Providence, R. I.

Filters. (Water.)
Hammond Iron Works, Warren, Pa.
Industrial Water Co., New York, N. Y.
Kennicott Water Softening Co., Chicago, Ill.
N. Y. Continental Jewell Filtration Co., New York, N. Y.
Scaife, Wm. B., & Son, Pittsburg, Pa.
Watson, N. A., Erie, Pa.

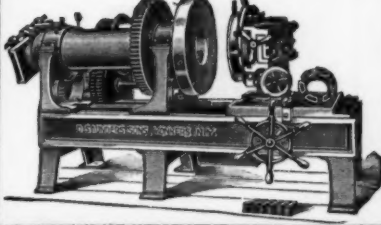
Filters. (Oil.)
Bonar James, & Co., Pittsburg, Pa.
Burt Mfg. Co., The, Akron, O.
Flower, Walter L., & Co., St. Louis, Mo.
Textile Mill Supply Co., Charlotte, N. C.

Filter Presses.
Johnson, J. & Co., New York, N. Y.
Stillwell-Bierce & Smith-Valle Co., Dayton, O.

Fire-Brick.
Carolina Fire-Brick Works, Killian, S. C.
Garden City Sand Co., Chicago, Ill.
Pomona Terra Cotta Co., Pomona, N. C.
Powhatan Clay Mfg. Co., Richmond, Va.
Reese-Hammond Fire-Brick Co., Bolivar, Pa.
Stevens, H., Sons Co., Macon, Ga.

Fire Extinguishers.
Bailey-Lobby Co., The, Charleston, S. C.
Charles Co., R. H., Quincy, Ill.
Childs Co., O. J., Utica, N. Y.
General Fire Extinguisher Co., Providence, R. I.
International Sprinkler Co., Philadelphia, Pa.

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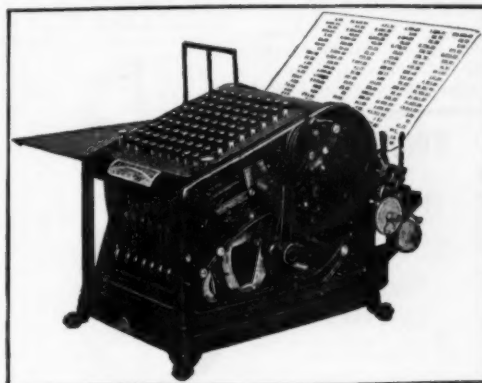
- Fire Escapes.**
Boles Iron & Wire Works, J. E., Detroit, Mich.
Dow Wire Works Co., Louisville, Ky.
- Flooring.** (Polished Hardwood.)
Adams, J. M., Baltimore, Md.
Wilce Co., The T., Chicago, Ill.
- Flour and Grist Mill Machinery and Supplies.**
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Caldwell, H. W., & Son Co., Chicago, Ill.
Dehner-Wuerpel Mill Bldg. Co., St. Louis, Mo.
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Salem Machine Works, Salem, Va.
Sprout, Waldron & Co., Muncy, Pa.
Starr, B. F., & Co., Baltimore, Md.
Wolf Co., Chambersburg, Pa.
- Forges.**
Boston Blower Co., Hyde Park, Mass.
Buffalo Forge Co., Buffalo, N. Y.
Crumlish Forge Co., Buffalo, N. Y.
Hartevant Co., B. F., Boston, Mass.
- Foundry Equipment and Supplies.**
Ething, Edw. J., Philadelphia, Pa.
Hill & Griffith Co., Cincinnati, O.
Obermayer Co., Cincinnati, O.
Paxson Co., J. W., Philadelphia, Pa.
- Foundry Ladles.** [See Foundry Equipment and Supplies.]
- Fruit Evaporators.**
Wilson, H. McK., & Co., St. Louis, Mo.
- Fuel Economizer.**
Bromell, Schmidt & Co., Ltd., York, Pa.
Green Fuel Economizer Co., Matleawan, N. Y.
- Fuel Oil Equipment and Machinery.**
Petroleum Iron Works Co., Washington, Pa.
Rockwell Engineering Co., New York.
- Furnace Builders.**
Erikson, Edw. E., Pittsburg, Pa.
Kennedy, Walter, Pittsburg, Pa.
Kneass & Fulton Iron Works, Birmingham, Ala.
Wilderow, Jas. F., Pittsburg, Pa.
- Furnace Heating.** (Stoves.)
Richmond Stove Co., Norwich, Conn.
- Furnaces.** (Metallurgical.)
Rockwell Engineering Co., New York, N. Y.
- Fuse.** (Wire Blocks, Fuses, etc.)
American Electric Fuse Co., Adrian, Mich.
- Gages (Recording) and Counters.**
American Steam Gauge Co., Boston, Mass.
Crosby Steam Gauge & Valve Co., Boston, Mass.
- Galvanized Sheets.**
American Sheet Steel Co., New York, N. Y.
- Gas Regulator.**
Jacobson Machine Manufacturing Co., Warren, Pa.
- Gas Producers.**
Erikson, Edw. E., Pittsburg, Pa.
Smythe Co., The S. R., Pittsburg, Pa.
Wood, R. D., & Co., Philadelphia, Pa.
- Gas and Steam Fitters' Tools.**
Sanders' Sons, D., Yonkers, N. Y.
- Gaskets.** (Rubber.)
Boston Belting Co., Boston, Mass.
- Gear Cutting Machines.**
Whitton Machine Co., D. E., New London, Conn.
- Gears and Pinions.** (Raw Hide.)
New Process Rawhide Co., Syracuse, N. Y.
- Gearing.**
American Machine & Foundry Co., Hanover, Pa.
Chester Steel Castings Co., Philadelphia, Pa.
Fairmount Machine Co., Philadelphia, Pa.
Jeffrey Mfg. Co., The, Columbus, O.
Link-Belt Engineering Co., Philadelphia, Pa.
Morse, Williams & Co., Philadelphia, Pa.
New Process Rawhide Co., Syracuse, N. Y.
Smith Co., S. Morgan, York, Pa.
Wood's Sons, T. E., Chambersburg, Pa.
- Grates and Grate Bars.**
Kelly Fdry. & Mch. Co., Goshen, Ind.
McClave, Brooks & Co., Scranton, Pa.
- Grates.** (Domestic.)
Burnham Grate Co., Huntsville, Ala.
- Grain Elevator Supplies.**
Aultman Co., The, Canton, O.
Caldwell, H. W., & Son Co., Chicago, Ill.
Clark Co., The, W. J., Salem, O.
Dodge Mfg. Co., Milwaukee, Ind.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Engineering Co., Nicetown, (Phila.) Pa.
- Graphite.**
Detroit Graphite Mfg. Co., Detroit, Mich.
Dixon Crucible Co., Jos. Jersey City, N. J.
Hill & Griffith Co., Cincinnati, O.
- Grease.** (Lubricating.)
Cook's Sons, Adam, New York, N. Y.
Robinson, Wm. C., & Son, Baltimore, Md.
- Grinding and Polishing Mch.**
Abrasive Material Co., The, Philadelphia, Pa.
Builders' Iron Foundry, Providence, R. I.
Carborundum Co., The, Niagara Falls, N. Y.
Norton Emery Wheel Co., Worcester, Mass.
Scranton Corundum & Emery Wheel Co., Scranton, Pa.
Starvant Mill Co., Boston, Mass.
Tantite Co., The, Stroudsburg, Pa.
Vitrified Wheel Co., Westfield, Mass.
- Groovers.**
Huth Bros., Rochester, N. Y.
- Hammers.** (Steam and Power.)
Dupont Mfg. Co., St. Johnsbury, Vt.
Robinson, J. M., & Co., Cincinnati, O.
- Handle Mch.** [See Woodwork'g Mch.]
- Egan Co., The, Cincinnati, O.**
Fay, J. A., & Co., Cincinnati, O.
Root, B. M., York, Pa.
Trevor Mfg. Co., Lockport, N. Y.
- Hardware Specialties.**
Covert Mfg. Co., West Troy, N. Y.
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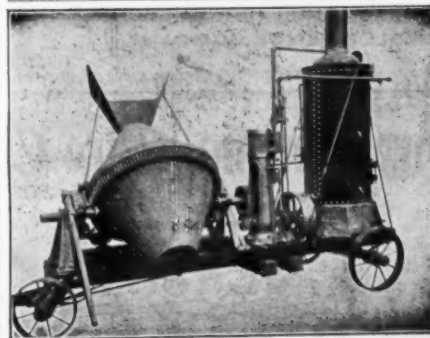
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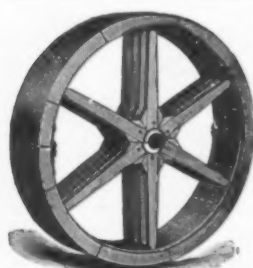
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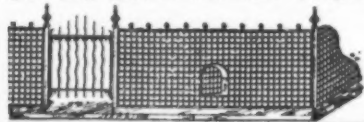
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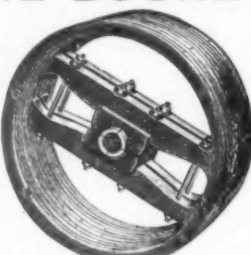
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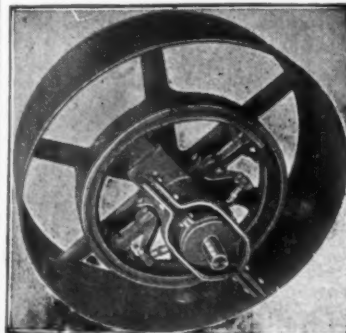
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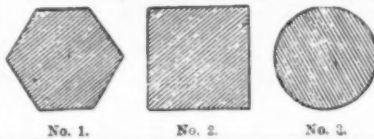
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For ALPHABETICAL INDEX See Page 29.

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American Supply Co., Providence, R. I.
Draper Co., Hopedale, Mass.
Fairmount Machine Co., Philadelphia, Pa.
Kilburn, Lincoln & Co., Fall River, Mass.
Lowell Machine Shop, Boston, Mass.
Mason Machine Works, Taunton, Mass.

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Cook's, Adam, Sons, New York, N. Y.
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Penberthy Injector Co., Detroit, Mich.

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Hallam, W. W., Macchago, Ga.
Wiley Co., The T., Chicago, Ill.

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Philadelphia Textile Specialty Mch. Co., Phila., Pa.

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Alsing Co., J. R., Inc., Brooklyn, N. Y.
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Hartley Mch., Variety Iron & Tool Works, Toledo, O.
Lester, Charles, & Co., Brooklyn, N. Y.
Philadelphia Textile Specialty Mch. Co., Phila., Pa.
Royerford Foundry & Machine Co., Royerford, Pa.

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Mallory, J. D., Baltimore, Md.
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Willebrandt, W. W., Detroit, Mich.
Wisconsin Mch. Co., Milwaukee, Wis.
Wormer, C. C., Mch. Co., Detroit, Mich.

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Besley & Co., Chas. H., Chicago, Ill.
Lands Tool Co., W. W., Danvers, Pa.
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Royerford Foundry & Machine Co., Royerford, Pa.

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American Tool Works Co., Cincinnati, O.

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Barrett Mfg. Co., Philadelphia, Pa.

Eastern Granite Roofing Co., Jersey City, N. J.
Garrett, C. S., & Son, Philadelphia, Pa.
National Roofing & Supply Co., Louisville, Ky.
Standard Paint Co., The, New York, N. Y.

Paper. (Sand, Emery.)
Hader, Adamson & Co., Philadelphia, Pa.
Parquetry.
Adams, J. M., Baltimore, Md.

Patent Attorney.
Weatherford & Hildebrand, Memphis, Tenn.
Patterns. (Metal.)
Ryan, J. J., & Co., Chicago, Ill.

Paving Materials.
Charlotte Roofing & Paving Co., Charlotte, N. C.
National Roofing & Supply Co., Louisville, Ky.
Robinson Contracting Co., Geo. A., Mobile, Ala.

Warren-Ehret Co., Philadelphia, Pa.
Perforated Metal.
Aitchison Perforated Metal Co., Robert, Chicago, Ill.

Bealy, Chas. H., & Co., Chicago, Ill.
Harrington & King Perforating Co., Chicago, Ill.
Hendrick Mfg. Co., The, Ltd., Carlisle, Pa.
Littlefield Bros., Cincinnati, Ohio.

Ludlow-Saylor Wire Co., The, St. Louis, Mo.
Mundt, Charles, & Sons, New York, N. Y.
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Alsing Co., J. R., Inc., Brooklyn, N. Y.

Aultman Co., The, Canton, O.
Bailey-Lobby Co., The, Charleston, S. C.
Bradley Pulverizer Co., Boston, Mass.
Cameron & Barkley Co., Charleston, S. C.

Crescon Co., Geo. V., New York, N. Y.
Foss Mfg. Co., Springfield, O.
Link-Belt Engineering Co., Philadelphia, Pa.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.

Raymond Bros. Impact Pulverizer Co., Chicago, Ill.
Sackett, A. J., Baltimore, Md.
Valk & Murdoch Iron Works, Charleston, S. C.
Walker & Elliott, Wilmington, Del.

West Pulverizing Machine Co., New York, N. Y.
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Phosphor Bronze. (Wire, Rods, Sheets.)
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Phosphor Bronze Smelting Co., Ltd., Philadelphia, Pa.
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Alabama Con. Coal & Iron Co., Birmingham, Ala.

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Glamorgan Pipe & Foundry Co., Lynchburg, Va.
U. S. Cast Iron Pipe & Foundry Co., Chattanooga, Tenn.

Wood, B. D., & Co., Philadelphia, Pa.
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National Pipe Bending Co., New Haven, Conn.

Simmons, John, Co., New York, N. Y.
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Simmons, John, Co., New York, N. Y.

Pipe. (Lead.)
Robertson Mfg. Co., James, Baltimore, Md.
Pipe. (Straight Riveted.)
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.

Pipe. (Spiral Riveted.)
Abendroth & Root Mfg. Co., New York, N. Y.
American Spiral Pipe Works, Chicago, Ill.
Pipe. (Sewer and Culvert.)

Pomona Terra Cotta Co., Pomona, N. C.
Stevens' Sons Co., H., Macon, Ga.
Warner Co., Chas., Wilmington, Del.
Pipe. (Wrought Iron.)

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Fairbanks Co., Baltimore, Md.
General Fire Extinguisher Co., Providence, R. I.
Pipe. (Unions and Joints.)

Dart Mfg. Co., E. M., Providence, R. I.
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Columbus Machine Co., Columbus, O.
Saunders' Sons, D., Yonkers, N. Y.

Pipe Fittings.
Davis, The John Co., Chicago, Ill.
General Fire Extinguisher Co., Providence, R. I.
Robertson Mfg. Co., James, Baltimore, Md.

Wolf Co., Fred. W., Chicago, Ill.
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Atlas Pipe Wrench Co., New York, N. Y.

Williams, J. H., & Co., Brooklyn, N. Y.
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American Tool Works Co., Cincinnati, O.

Plantation Locomotives. (See Locomotive Builders.)
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Hanson & Van Winkle Co., Newark, N. J.
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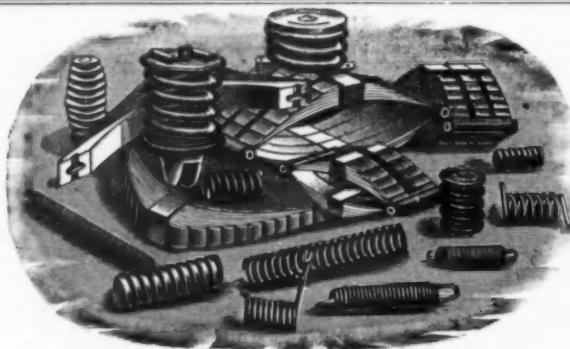
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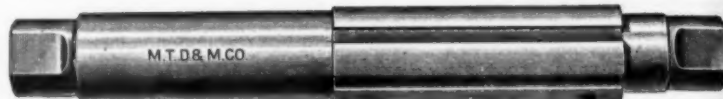
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INDEX See Page 29.**Pneumatic Tools.** [See Tools, Pneumatic.]**Pneumatic Tubes.** (For Handling Cash)

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Caldwell, H. W., & Son Co., Chicago, Ill.

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Weir Frog Co., Cincinnati, O.

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Steel Rail Supply Co., The, New York, N. Y.

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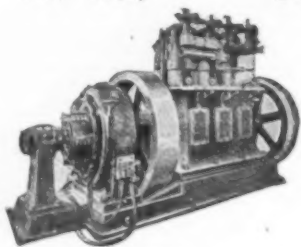
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Classified Index of Advertisers. For ALPHABETICAL INDEX See Page 29.

Self-Measuring Shop Oil Cabinet.
Bower & Co., B. F., Ft. Wayne, Ind.

Separators. (Dust.)
Allington & Curtis Mfg. Co., Saginaw, Mich.
Sterling Blower & Pipe Mfg. Co., Hartford, Conn.
Sturtevant Co., B. F., Boston, Mass.

Separators. (Steam and Oil.)
American Tool Works Co., Cincinnati, O.
Austin Separator Co., Detroit, Mich.
Bonar, James, & Co., Pittsburg, Pa.
Harrison Safety Boiler Works, Philadelphia, Pa.

Shapers.
American Tool Works Co., Cincinnati, O.

Sheet-Metal-Working Machinery.
[See Metal-Working Machinery.]

Sheet Steel and Iron.
American Sheet Steel Co., New York, N. Y.

Shingle, Lath and Stave Machinery.
[See Woodworking Machinery.]

Lane Mfg. Co., Montpelier, Vt.
Trevor Mfg. Co., Lockport, N. Y.

Ship Builders. (Iron and Steel)
Newport News Shipbuilding & Dry Dock Co., Newport News, Va.

Skylights.
Badger, E. B., & Sons Co., Boston, Mass.
Downman Mfg. Co., Atlanta, Ga.
Merchant & Co., Inc., Philadelphia, Pa.
National Skylight & Construction Co., New York, N. Y.
Noorden Co., E. Van, Boston, Mass.

Slates. (Roofing and Blackboard.)
Galt, John, & Sons, New York, N. Y.
Genuine Bangor Slate Co., Easton, Pa.
David McKenna, Washington, Pa.
Williams, J. H., & Co., Arvonia, Va.

Slaters' Tools.
Galt, John, & Sons, New York, N. Y.

Smoke Stacks. (Iron and Steel.)
Hammond Iron Works, Warren, Pa.
Keeler, E., Co., Williamsport, Pa.
Littleford Bros., Cincinnati, Ohio.
Scheldt, J. S., & Sons Co., Macon, Ga.
York Mfg. Co., York, Pa.

Southerners' and Butchers' Mch.
Dopp, H. Wm., & Son, Buffalo, N. Y.

Solder.
Hertz, Theo., & Son, St. Louis, Mo.
Ryan, J. J., & Co., Chicago, Ill.

Speaking Tubes.
Bealy, Chas. H., & Co., Chicago, Ill.

Springs. (Bicycle Saddle, Machinery, Railway and Spiral.)
Bealy, Chas. H., & Co., Chicago, Ill.
Boston Belting Co., Boston, Mass.
Cary Spring Works, New York, N. Y.
French Spring Co., A., Pittsburg, Pa.
Lathrop Steel & Coupler Co., Philadelphia, Pa.
Ludlow-Saylor Wire Co., The, St. Louis, Mo.

Spelter.
Hertz, Theo., & Son, St. Louis, Mo.

Sprinklers. (Automatic.) [See Fire Extinguishers.]

Stairways. (Iron.)
Lykes, John D., Birmingham, Ala.

Stamp Mills.
Mecklenburg Iron Works, Charlotte, N. C.

Standpipes.
Birmingham Boiler Works, Birmingham, Ala.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Means & Fulton Iron Works, Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va.
York Mfg. Co., York, Pa.

Steam Gages.
Crosby St. Gage & Valve Co., Boston, Mass.
Lunkenheimer Co., Cincinnati, O.

Steam Fitters and Supplies.
General Fire Extinguisher Co., Providence, R. I.

Steam Heating.
General Fire Extinguisher Co., Providence, R. I.
Keeler Co., E., Williamsport, Pa.
Peck-Hammond Co., The, Cincinnati, O.
Warren Webster & Co., Camden, N. J.

Steam Shovels. (See Dredges and Excavators.)

Steam Traps.
American Blower Co., Detroit, Mich.
Bonar, James, & Co., Pittsburg, Pa.
Davis, The John Co., Chicago, Ill.
Eureka Iron Co., Chicago, Ill.
Haines Co., W. S., Philadelphia, Pa.
Mason Regulator Co., Boston, Mass.
Sturtevant Co., B. F., Boston, Mass.
Wright Mfg. Co., Detroit, Mich.

Steamship Lines.
Atlantic Transport Co., Baltimore, Md.
Bay Line, Baltimore, Md.
Merchants & Miners' Trans. Co., Baltimore, Md.
Richmond & York River Line, Baltimore, Md.

Steel. (Manufacturers of.)
Acme Steel & Malleable Iron Works, Buffalo, N. Y.
American Sheet Steel Co., New York, N. Y.
Chester Steel Castings Co., Philadelphia, Pa.
Lathrop Steel Co., Philadelphia, Pa.

Steel Couplers. (Automatic.)
Lathrop Steel & Coupler Co., Philadelphia, Pa.

Steel Hoops, Bands.
American Steel Hoop Co., New York, N. Y.

Steel Rods. (Polished.)
Finished Steel Co., The, Youngtown, O.

Stokers. (Mechanical.)
Washington Machine Co., Pittsburg, Pa.

Street Lamps.
Dietz Co., R. E., New York, N. Y.

Structural Steel and Iron.
American Bridge Co., New York, N. Y.
American Steel Hoop Co., New York, N. Y.
Bartlett, Hayward & Co., Baltimore, Md.
Belmont Iron Works, Philadelphia, Pa.
Columbia Bridge Co., Pittsburg, Pa.
Morrison & Kindervater, Richmond, Va.
National Skylight & Construction Co., New York, N. Y.
Scaife, Wm. B., & Sons, Pittsburg, Pa.
Schreiber L., & Sons Co., The, Cincinnati, O.
Virginia Bridge & Iron Co., Roanoke, Va.

Studs, Nuts.
Hoopes & Townsend Co., Philadelphia, Pa.
Miles, Franklin R., Philadelphia, Pa.
Milton Mfg. Co., Milton, Pa.

Sugar-Mill Machinery.
Morris, Henry G., Philadelphia, Pa.
Wolf Co., Fred. W., Chicago, Ill.

Switchboards, Switches, etc.
General Incandescent Arc Light Co., New York, N. Y.
Smith, Sam'l J., & Co., Charlotte, N. C.
Western Electrical Supply Co., St. Louis, Mo.
Washington Electric & Mfg. Co., Pittsburg, Pa.

Tanks. (Iron and Steel.)
Bartlett, Hayward & Co., Baltimore, Md.
Birmingham Boiler Works, Birmingham, Ala.
Caldwell, Co., W. E., Louisville, Ky.
Clarendon Boiler Works, N. Clarendon, Pa.

Gem City Boiler Co., Dayton, O.
Harry Brothers Co., Dallas, Tex.
Hartley Boiler Works, Montgomery, Ala.
Hassellton Boiler Co., New York, N. Y.
Keeler Co., E., Williamsport, Pa.
Lombard Iron Works & Supply Co., Augusta, Ga.
Littleford Bros., Cincinnati, O.
Means & Fulton Iron Works, Birmingham, Ala.
Petroleum Iron Works Co., Washington, Pa.
Scaife, Wm. B., & Sons, Pittsburg, Pa.
Smith Co., B. Morgan, York, Pa.
Vaik & Murdoch Iron Works, Charleston, S. C.
Virginia Bridge & Iron Co., Roanoke, Va.
Wolf Co., Fred. W., Chicago, Ill.
Wood, R. D., & Co., Phila., Pa.
York Mfg. Co., York, Pa.

Tanks. (Wood.)
Caldwell, Co., W. E., Louisville, Ky.
Cypress Lumber Co., Apalachicola, Fla.
Davis, G. M., & Son, Palatka, Fla.
Flint & Walling Mfg. Co., Kendallville, Ind.
Lewis, H. F., & Co., Ltd., New Orleans, La.
Woolford Wood Tank Mfg. Co., G., Philadelphia, Pa.

Telephones.
Alexander, Jr., Co., S. B., Charlotte, N. C.
Bunnell, J. H., & Co., New York, N. Y.
Western Electrical Supply Co., St. Louis, Mo.

Telegraph Instruments, & Supplies.
Bunnell, J. H., & Co., New York, N. Y.

Telephone Poles.
New Orleans Wood Preserving Wks., New Orleans, La.
Tennessee Lumber Co., Lewisburg, Tenn.

Terne Plate.
Merchant & Co., Inc., Philadelphia, Pa.

Terra Cotta.
Pomona Terra Cotta Co., Pomona, N. C.
Warner Co., Charles, Wilmington, Del.

Textile Machinery [See Cotton Mill Mach.]

Tinplate.
Merchant & Co., Inc., Philadelphia, Pa.

Tires, Steel. (Locomotive and Car.)
Lathrop Steel Co., Philadelphia, Pa.

Tobacco Machinery.
American Machine & Foundry Co., Hanover, Pa.
Buckeye Iron & Brass Works, Dayton, O.
Cardwell Machine Co., Richmond, Va.

Tools. (Machinists' and Mechanics')
American Tool Works Co., Cincinnati, O.
Bealy, Chas. H., & Co., Chicago, Ill.
Landis Tool Co., Waynesboro, Pa.
McCabe, J. J., New York, N. Y.
Morris Twist Drill & Machine Co., New Bedford, Mass.
Pratt & Whitney Co., Hartford, Conn.
Williams, J. H., & Co., Brooklyn, N. Y.

Tools. (Pneumatic.)
Schaefer, W. J., & Co., New York, N. Y.

Tools. (Tinner's')
Niagara Machine & Tool Works, Buffalo, N. Y.

Tube Boxes.
Clark Co., W. J., Salem, O.

Towers. (Steel and Wood.)
Caldwell, Co., W. E., Louisville, Ky.

Towns.
Oedartown Company, Philadelphia, Pa.
Old Dominion Land Co., Newport News, Va.
Wheeling Board of Trade, Wheeling, W. Va.

Tramway. (Overhead.)
Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.
Spidel, J. G., Reading, Pa.

Tramway. (Wire Rope.)
Aultman Co., Canton, O.
Caldwell, H. W., & Sons Co., Chicago, Ill.
Cresson Co., Geo. V., New York, N. Y.
Hust Co., G. W., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Leschen, A., & Sons Rope Co., St. Louis, Mo.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Engineering Co., Nicotown (Phila.), Pa.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Trenton Iron Co., Trenton, N. J.

Tube Cleaners.
Paxson Co., J. W., Philadelphia, Pa.

Tubing.
Bealy, Chas. H., & Co., Chicago, Ill.
Ludlow-Saylor Wire Co., The, St. Louis, Mo.

Turbines. [See Water Wheels.]

Turntables.
Dodge Mfg. Co., Mishawaka, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.

Valves.
American Steam Gage Co., Jamaica Plain, Mass.
Automatic Reducing Valve Co., Chicago, Ill.
Boston Belting Co., Boston, Mass.
Crosby Steam Gage & Valve Co., Boston, Mass.
Crosby Mfg. Co., Chicago, Ill.
Davis, The John Co., Chicago, Ill.
Fairbanks Co., Baltimore, Md.
Gardner Governor Co., Quincy, Ill.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Jenkins Bros., New York, N. Y.
Ludlow Valve Mfg. Co., Troy, N. Y.
Lunkenheimer Co., Cincinnati, O.
Mason Regulator Co., Boston, Mass.
Mueller Mfg. Co., H., Decatur, Ill.
Sweet & Doyle, Cohoes, N. Y.
Wolf, Fred. W., & Co., Chicago, Ill.
Wood, R. D., & Co., Philadelphia, Pa.

Veneer Machines.
Coe Mfg. Co., The, Painesville, O.
Titus, E. E., Petersburg, Va.

Ventilators.
Downman Mfg. Co., Atlanta, Ga.
Pancoast International Ventilator Co., Philadelphia, Pa.
Van Noorden Co., E., Boston, Mass.

Wagon Builders' Mch. & Supplies.
Cordeman, Meyer & Co., Cincinnati, O.
Egan Co., The, Cincinnati, O.
Fay, J. A., & Co., Cincinnati, O.

Washers. (Ore and Phosphate.)
Aultman Co., The, Canton, O.
Bailey Leiby Co., The, Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
George Foundry & Machine Works, Rome, Ga.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.

Watchman's Clocks.
Bealy, Chas. H., & Co., Chicago, Ill.
Naus & Co., New York, N. Y.
Textile Mill Supply Co., Charlotte, N. C.

Water and Electric Power.
Roanoke Nav. & Water-Power Co., Weldon, N. C.

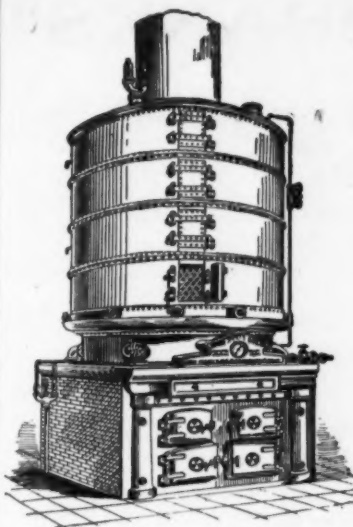
Water Softening Apparatus. (Purifying.)
Industrial Water Co., New York, N. Y.
Kennicott Water Softener Co., Chicago, Ill.
Scaife, Wm. B., & Sons, Pittsburg, Pa.

Water-Wheels and Turbines.
Alcott, T. C., & Son, Mt. Holly, N. J.
Lane Mfg. Co., Montpelier, Vt.
Leffel, James, & Co., Springfield, O.
Smith Co., S. Morgan, York, Pa.
Stillwell-Bierce & Smith-Valle Co., Dayton, O.
York Mfg. Co., York, Pa.

Water Meters.
Pittsburg Meter Co., E. Pittsburg, Pa.

Water Troughs. (Steel.)
Clarendon Boiler Works, N. Clarendon, Pa.

Water-Works and Sewerage.
Flint & Walling Mfg. Co., Kendallville, Ind.
Nicol, Baur & Foster, Mobile, Ala.
Weatherford & Hilderbrand, Memphis, Tenn.
Wood, R. D., & Co., Philadelphia, Pa.

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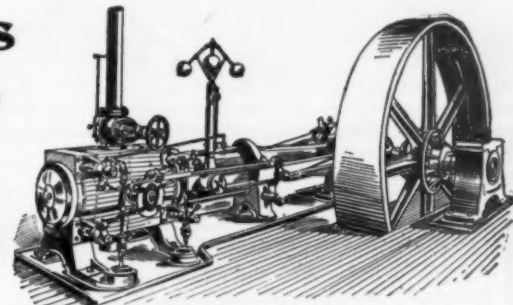
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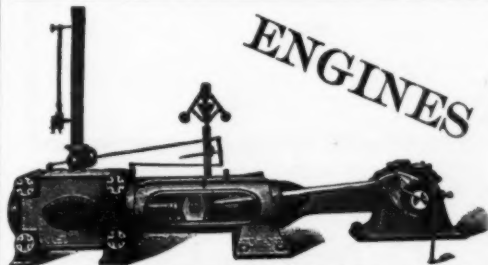
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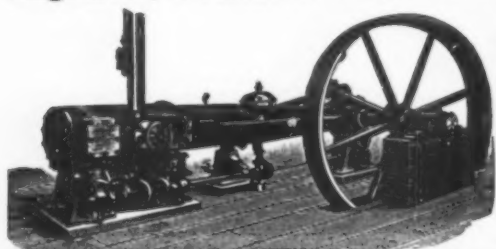
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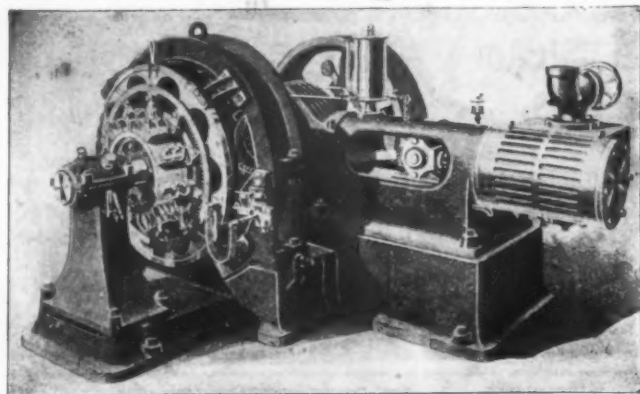
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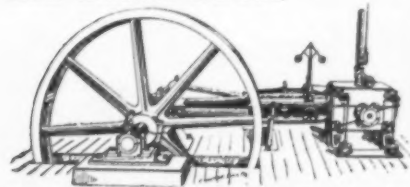
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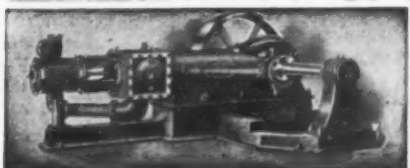
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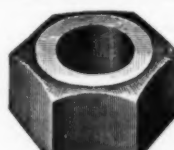
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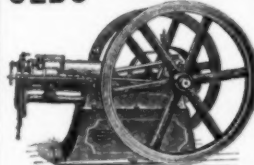
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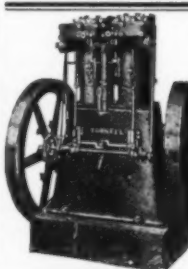
OLDS GASOLINE ENGINES



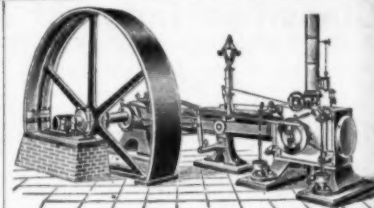
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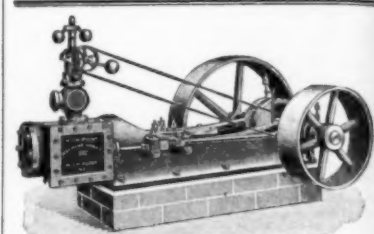
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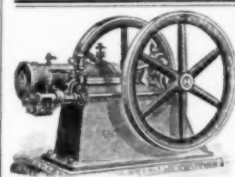
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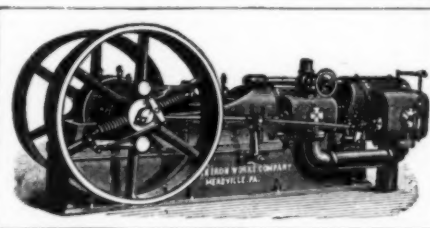
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HARRISBURG, PA., U. S. A.

Classified Index of Advertisers. FOR ALPHABETICAL INDEX See Page 29.

Weighing Machine. (Automatic.)
N. E. Automatic Weighing Machine Co., Boston, Mass.

Well Contractors. (Oil, Artesian, etc.)
Andrews, Perry, & Bro., Atlanta, Ga.
Austin Mfg. Co., F. C., Harvey, Ill.
Bacon Air Lift Co., New York, N. Y.
Cook Well Co., St. Louis, Mo.
Gould, F. M., Richmond, Va.
Hughes Specialty Well Drilling Co., Charleston, S. C.
Sydney Pump & Well Co., Inc., Richmond, Va.

Well Drillers. (See Well Tools and Supplies.)

Well Tools and Supplies. (Artesian.)
Austin Mfg. Co., F. C., Harvey, Ill.
Bacon Air Lift Co., New York, N. Y.
Cook Well Co., The, St. Louis, Mo.
Gould, F. M., Richmond, Va.
Hughes Specialty Well Drilling Co., Charleston, S. C.
Perry Andrews & Co., Atlanta, Ga.
Sydney Pump & Well Co., Inc., Richmond, Va.
Williams Bros., Ithaca, N. Y.

Wheelbarrows and Trucks.
Jackson Mfg. Co., Harrisburg, Pa.
Kilbourne & Jacobs Mfg. Co., Columbus, O.

Whistles. (Whines, Sirens, etc.)
American Steam Gauge Co., Jamaica Plain, Mass.
Crosby Steam Gauge & Valve Co., Boston, Mass.
Lankenheimer Co., Cincinnati, O.

White Lead.
French, Samuel H., & Co., Philadelphia, Pa.

Windlasses.
American Ship Windlass Co., Providence, R. I.

Windmills.
Pist & Walling Mfg. Co., Kendallville, Ind.

Window Guards. (Wire.) (See Wire Goods.)

Window Frames & Sashes. (Metallic.)
Badger, E. L., & Sons, Boston, Mass.
Smith-Warren Co., East Cambridge, Mass.

Wire Cloth. (Iron, Steel, Brass, etc.)
Burger Iron & Wire Works Co., Akron, O.
Caldwell, H. W., & Sons, Chicago, Ill.
Meyers, Fred. J., Mfg. Co., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Goods.
Balderson, H., & Son, Baltimore, Md.
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Burger Iron & Wire Works Co., Akron, O.
Dow Wire Works Co., Louisville, Ky.
Dufar & Co., Baltimore, Md.

Ludlow-Saylor Wire Co., The, St. Louis, Mo.
Meyers Mfg. Co., The, Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Netting.
Chandler Fence Co., Baltimore, Md.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Rope Thimbles.
Jackson Mfg. Co., Harrisburg, Pa.

Wire, Barbed Wire, etc.
Bady, Chas. H., & Co., Chicago, Ill.
Ludlow-Saylor Wire Co., The, St. Louis, Mo.

Wire Rope.
Contractors' Plant Mfg. Co., Buffalo, N. Y.
Fairbanks Co., Baltimore, Md.
Hazard Mfg. Co., Wilkes Barre, Pa.
Leschen, A., & Sons Rope Co., St. Louis, Mo.
Lidgerwood Mfg. Co., New York, N. Y.
Macomber & Whyte Rope Co., Chicago, Ill.
Roebbing's, John A., Sons Co., Trenton, N. J.
Trenton Iron Co., Trenton, N. J.

Wire-Rope Tramways. (See Tramways.)
(Wire Rope.)

Wrenches. (Drop Forged.)
Atlas Pipe Wrench Co., New York, N. Y.
Williams, J. H., & Co., Brooklyn, N. Y.

Woodsplitting Machines.
Trevor Mfg. Co., Lockport, N. Y.

Woodworking Machinery.
Chattanooga Machinery Co., Chattanooga, Tenn.
Chicago Knife Works, Chicago, Ill.
Coe Mfg. Co., The, Painesville, O.
Cordeman Meyer & Co., Cincinnati, O.
DeLoach Mill Mfg. Co., Atlanta, Ga.
DuBois Iron Works, DuBois, Pa.
Egan Co., The, Cincinnati, O.
Fay, J. A., & Co., Cincinnati, O.
Frank Machinery Co., The, Buffalo, N. Y.
Gibbs, W. H., & Co., Columbia, S. C.
Greaves, Klusman & Co., Cincinnati, O.
Hather Bros., Rochester, N. Y.
Lane Mfg. Co., Montpelier, Vt.
Prybill, P., New York, N. Y.
Root, B. M., New York, N. Y.
Shimer, Samuel J., & Sons, Milton, Pa.
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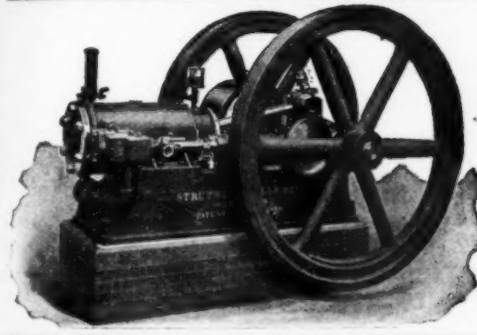


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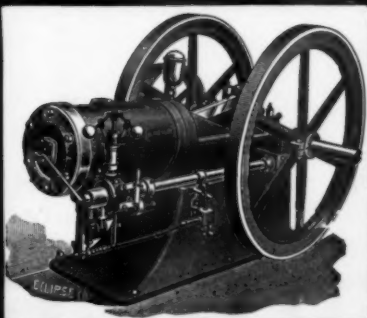
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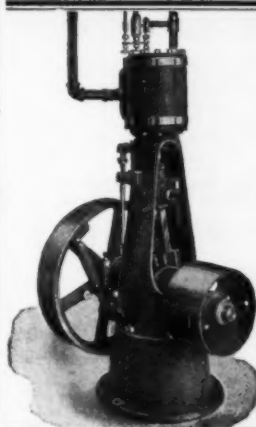
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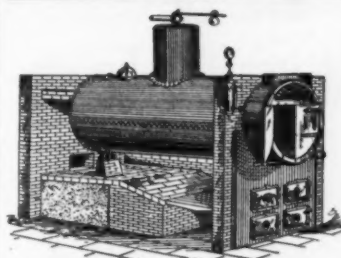
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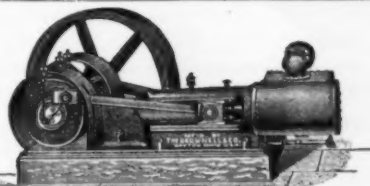


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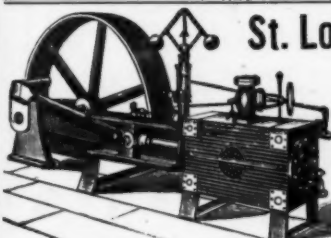
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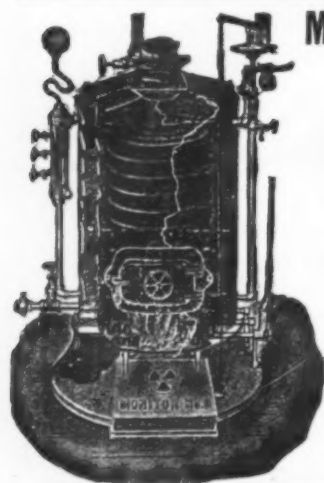
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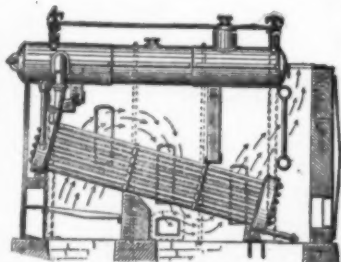
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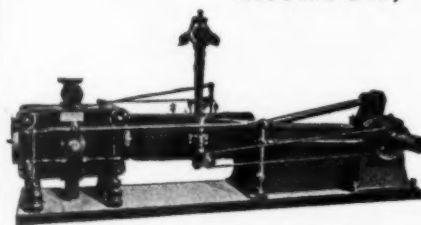
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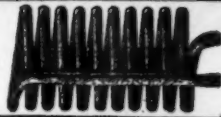
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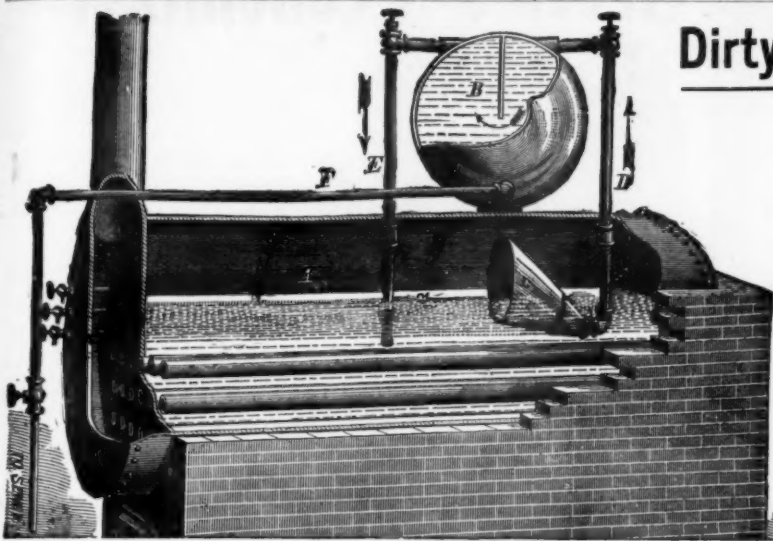
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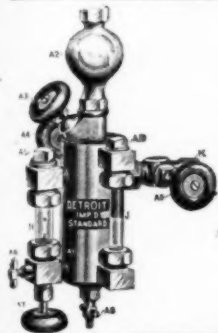
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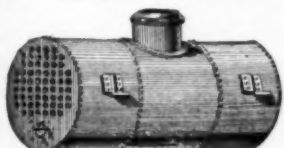
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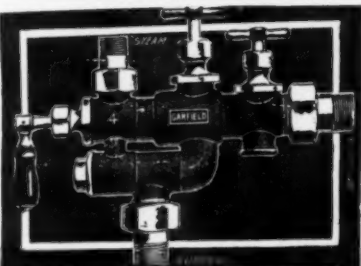
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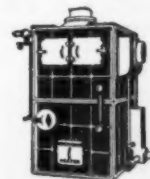
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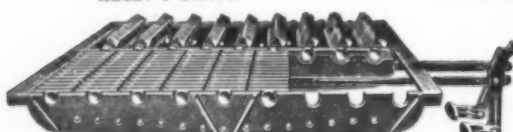
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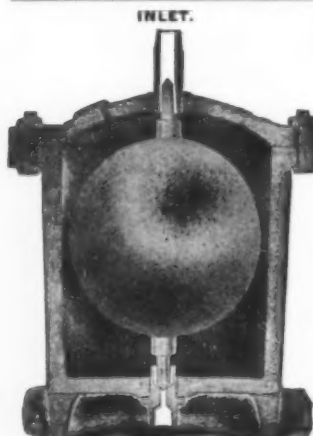
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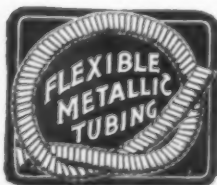
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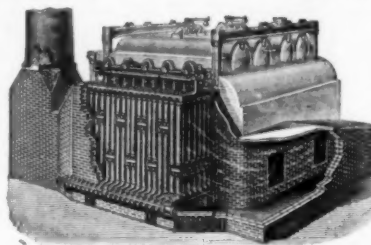
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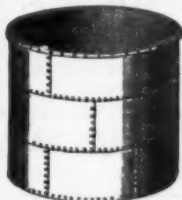
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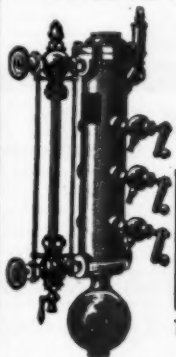
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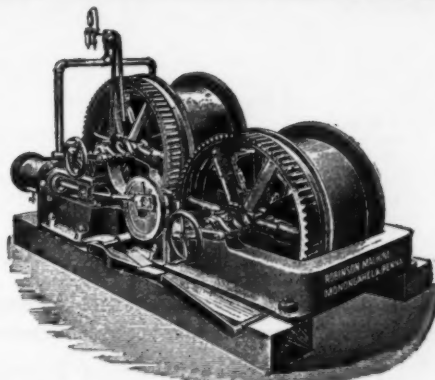
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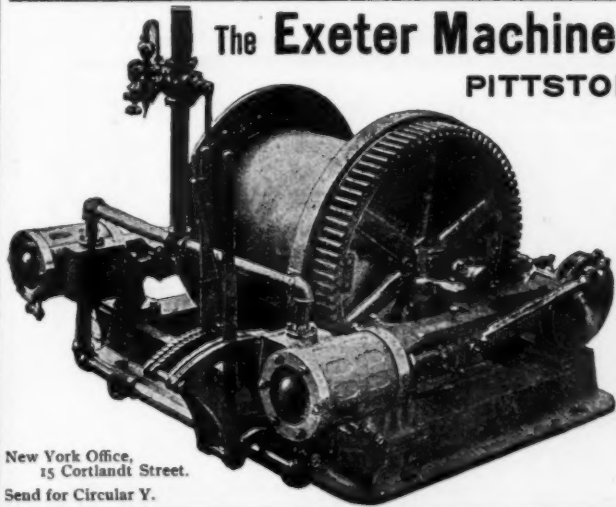
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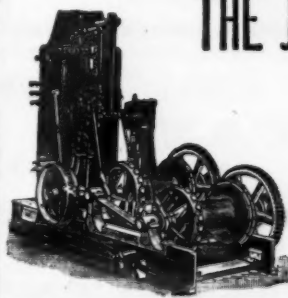
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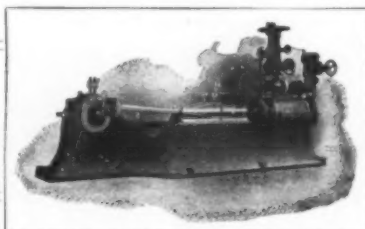
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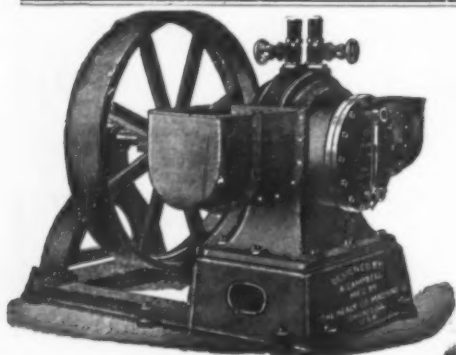
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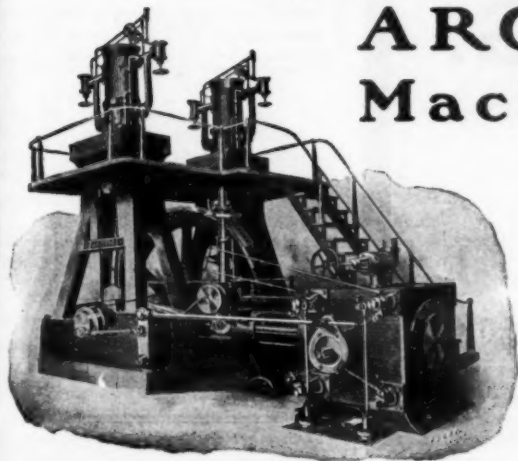
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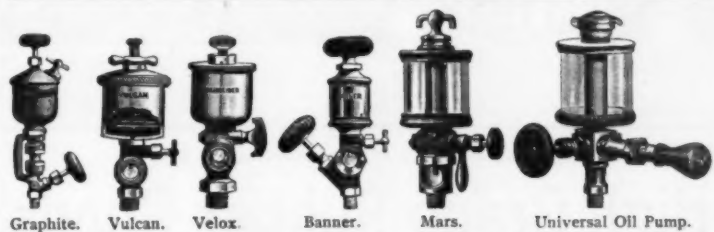
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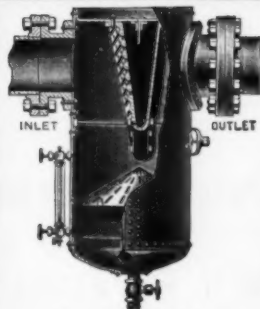


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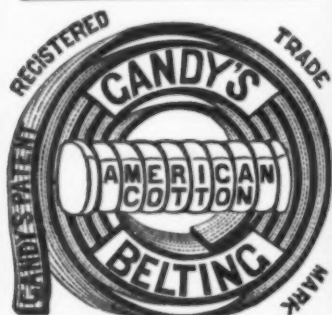
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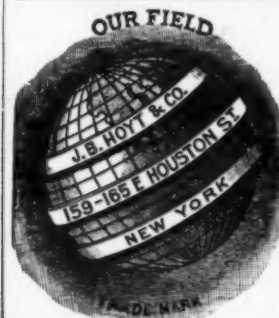


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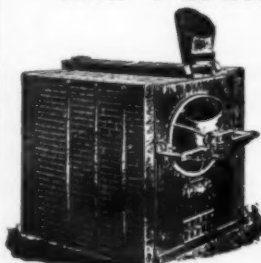
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You will

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"When you think of belts,
think of Cocheco."

I. B. WILLIAMS & SONS

Dover, N. H.

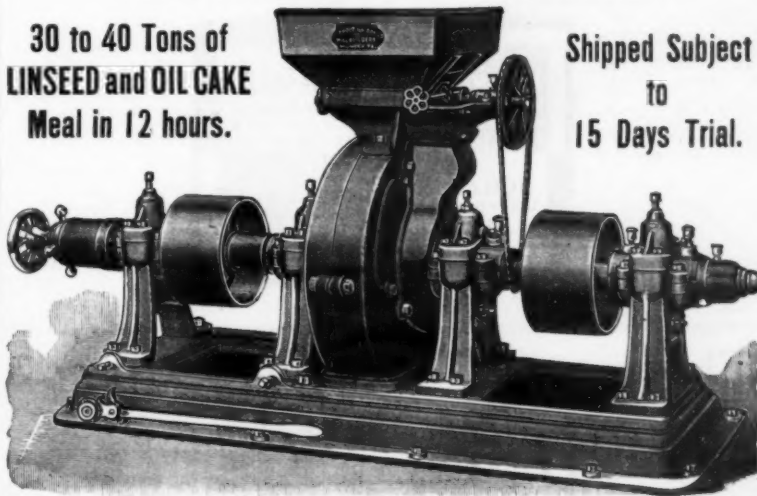
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Meal in 12 hours.

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QUARANTEED to do as much work, both as to Quantity and Quality, as any mill built, and the manner in which it is constructed makes it the BEST MILL offered to the trade. Write for prices.

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Builders of Flour Meal and Feed Mills.

MUNCY, PENNA.

Important Litigation Relating to Magnesia Covering Patents.

The Kearsbey & Mattison Co., the owners of the patents for magnesia covering, have commenced a suit in the United States Circuit Court for the Southern District of New York against the Philip Carey Mfg. Co., George D. Crabbs, J. E. Breese, Schoellkopf, Hartford & Hanna Co., J. F. Schoellkopf, Jr., James Hartford, W. W. Hanna, C. P. Hugo Schoellkopf and Jesse W. Starr to restrain the defendants from making and selling magnesia covering for boilers and steam pipes containing more than 50 per cent. of magnesia, and especially coverings containing 85 per cent. of magnesia.

The bill prays for a preliminary writ of injunction, to be continued during the pendency of the suit, and upon the final determination thereof to be made perpetual, and also demands an accounting and damages.

All persons are respectfully requested to refrain from purchasing covering infringing these patents, as such purchasing must of necessity lead to suit. Beware of Fraudulent so-called "Magnesia" Coverings as well as those infringing on patents.

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MANUFACTURERS' RECORD.

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

VOL. XL. No. 4.
WEEKLY.

BALTIMORE, AUGUST 15, 1901.

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Manufacturers' Record.

RICHARD H. EDMONDS, President.
THOMAS P. GRASTY, Vice-President.

OFFICE: MANUFACTURERS' RECORD BUILDING,
BALTIMORE.

PUBLISHED EVERY THURSDAY BY THE
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RICHARD H. EDMONDS,
Editor and General Manager.

THOMAS P. GRASTY,
General Staff Correspondent.

SUBSCRIPTION, - - - \$4.00 a Year.
To FOREIGN COUNTRIES, - - 28s. 6d. a Year.

BALTIMORE, AUGUST 15, 1901.

COPY FOR ADVERTISEMENTS.

Advertising copy (changes or new advertisements) should reach us Saturday Morning to insure insertion in the issue of the following week.

For the first issue in the month we should receive copy by Friday Morning of the week preceding.

One of the Helps.

In a letter to the Manufacturers' Record Mr. J. Paul Wilson, secretary of the Commercial Club of Mobile, Ala., writes:

The accuracy and energy with which the Manufacturers' Record keeps in touch with the industrial advancement of the South makes it invaluable to a commercial body seeking to develop its own section.

The Manufacturers' Record appreciates such messages as this. It is one of the influences which encourage us to persist in the work for Southern advancement and to advance with the South.

The South and Good Roads.

Martin Dodge, director of the good roads office of the United States Department of Agriculture, has issued a circular urging attendance upon the International Good Roads Congress, to be held at Buffalo September 16 to 21. He says that the National Good Roads Association, in co-operation with the Illinois Central Railroad and the Agricultural Department, has just completed a very successful good roads campaign in Louisiana, Mississippi, Tennessee, Kentucky and Illinois. More than twenty miles of model earth, gravel and stone roads were built, and several large enthusiastic conventions were held. Thousands of persons flocked to see the practical work of what was known as the "good roads train" on the Illinois Central Railroad and to participate in the deliberations of the conventions. This work has aroused great interest and enthusiasm for better roads not only in the Mississippi valley, but throughout the country, and Mr. Dodge believes that the congress at Buffalo, the first of its kind, will further promote the interest in the highways. It is desirable, particularly for the South, that this expectation be fulfilled. There are points in North Carolina, Florida, Texas and other States where great

progress has recently been made in road construction. In some of the older Southern States good roads have been the rule from the earliest days. But there is need of better roads as traffic feeders to railroads and as trade feeders to towns and cities, as well as for the betterment of the conditions of country life. Immigration is moving toward the South more rapidly than ever before. The extension of good roads there will still further hasten that movement and contribute directly and indirectly to the material progress of the South.

Sent From the South.

Though the export trade of the United States did not maintain during the past fiscal year the pace of the preceding twelve months, it reached the enormous total of \$1,487,755,557. To that total the South contributed more than 35 per cent., and through Southern ports passed goods to the value of \$528,684,706, or 35.53 per cent. of the total. A comparison of the exports for two years at Southern ports and in other customs sections follows:

Ports.	1900.	1901.
Baltimore.....	\$115,530,378	\$106,239,081
Beaufort, S. C.....	189,908	129,639
Brunswick.....	7,373,487	7,962,637
Charleston.....	7,151,720	7,084,215
Fernandina.....	2,588,808	1,904,770
Georgetown, S. C.....	.....	5,500
Newport News.....	34,758,323	32,567,912
Norfolk.....	13,112,086	10,308,489
Panama, N. C.....	2,005	.....
Richmond.....	.....	17,200
St. John's, Fla.....	269,611	204,670
St. Mary's, Ga.....	4,944	.....
Savannah.....	38,251,981	46,738,967
Wilmington.....	10,975,511	12,013,659
Apalachicola.....	424,783	305,782
Brazos de Santiago.....	210,375	185,805
Corpus Christi.....	6,305,430	6,645,019
Galveston.....	85,657,524	101,857,300
Key West.....	1,395,326	1,033,265
Mobile.....	12,206,324	11,837,105
New Orleans.....	115,858,764	152,776,596
Paso del Norte.....	6,519,819	4,241,898
Pearl River.....	1,887,863	2,817,298
Pensacola.....	14,413,522	13,455,761
St. Marks.....	6,300	.....
Saluria.....	7,392,110	6,980,716
Tampa.....	1,457,255	1,321,419
Total South.....	\$484,644,177	\$528,684,706
North Atlantic.....	733,360,675	777,673,870
All others.....	176,478,230	181,396,981
Total.....	\$1,394,483,082	\$1,487,755,557

The figures for the three North Atlantic ports and the three Southern ports at which the bulk of the increase for their respective sections occurred are as follows:

	1900.	1901.
Boston.....	\$112,195,555	\$143,708,268
New York.....	518,834,471	529,592,978
Portland.....	9,941,884	12,416,793
New Orleans.....	115,858,764	152,776,596
Galveston.....	85,657,524	101,857,300
Savannah.....	38,251,981	46,738,967

The increases at these ports in their order were: Boston \$31,512,713, or 28 per cent.; New York \$10,758,507, or 2 per cent.; Portland \$2,474,909, or 24 per cent.; New Orleans \$36,917,835, or 31 per cent.; Galveston \$16,199,776, or 18 per cent., and Savannah \$8,486,986, or 22 per cent.

New Orleans led the ports of the country both in actual increase in the value of its exports, more than three times the increase at New York, and also in the percentage of increase. Boston's actual increase was more than \$5,000,000 behind that of New Orleans, and its exports were more than \$9,000,000 less. The percentage of Portland was somewhat larger than that of

Savannah, but its actual increase less than a third of Savannah's, and only about one-seventh of Galveston's.

The manifestations at these ports explain the figures of the totals in their sections. The total increase at all ports was \$93,272,475, or 6.68 per cent.; at North Atlantic ports \$44,313,195, or 6.04 per cent. below the average of all; at Southern ports \$44,040,529, or 9.08 per cent., and at all other ports \$4,918,751, or 2.78 per cent.

Its Future Its Own to Make.

On another page of this week's issue of the Manufacturers' Record Dr. Charles W. Dabney has a comprehensive article directing attention to the important part to be played by the agricultural resources of the South in its general development. He makes the points that extensive farming is not the kind that makes a people rich, but that diversified agriculture or farming on a small scale is the best for all; that the country that can supply the greatest variety of products, raw and manufactured, and can find markets for them near home, is sure in time to become the wealthiest country; that manufacturers make the home market; that farmers make markets to a large extent for the manufacturers, and hence that the best farming country is, after all, the best manufacturing country, and vice versa.

He finds the South potentially illustrative of these principles. He knows no other country in the world so rich in both agricultural and manufacturing resources, varied and mingled as they are with minerals and hardwoods in the upland regions, wheat, tobacco and cotton fields in the Piedmont country, adjacent to great water-powers, and the truck gardens of the continent alongside of almost inexhaustible deposits of phosphates in the coast region. The advantages of resources are matched by the advantages of location as to the great markets of this continent and of the world, which are to be enhanced with the construction of an isthmian waterway. He contends that with intensive methods of agriculture, utilizing every means for thorough cultivation, and with manufactures in every valley to make markets for the heavier and more perishable products, the Southern States will produce ten times the agricultural products they now do, the natural growth of the cotton trade making it possible for the South, if it keeps up its present proportion of the world's cotton supplies, to sell annually 38,000,000 bales when mankind becomes as civilized as European peoples now are, similar advance being made by cereals, tobacco, livestock, vegetables and fruits.

These statements of Dr. Dabney are timely. Coming from a man who won distinction as a scientific and practical expert when he was assistant secretary of the United States Department of Agriculture, and who, as president of the University of Tennessee, is one of the leaders in training the young men

of the South to the higher agricultural and industrial life, they are worthy of consideration and application on the part of all progressive Southerners.

Fuel of the Future.

Representative English papers are still discussing the coal question in the light of the progress as a coal producer of the United States and of the recent export tax on coal provided by Parliament. The Economist of London quotes from the report of the Board of Trade on the production of coal in various countries of the world, the totals for 1900 being estimates only. These show the following comparison for five years:

Country.	1900. Tons.	1896. Tons.
United Kingdom.....	225,181,000	195,361,000
United States.....	245,422,000	171,416,000
Germany.....	109,225,000	85,690,000
France.....	32,587,000	28,750,000
Belgium.....	23,362,000	21,252,000
Russia.....	.....	9,351,000
Austria-Hungary.....	.....	11,035,000
Spain.....	2,773,000	1,853,000
Japan.....	.....	5,020,000
India.....	.....	3,948,000
New South Wales.....	5,507,000	3,910,000
Canada.....	4,761,000	3,244,000

The correct figures for the United States are 240,965,917 long tons, or 260,881,827 short tons. These figures make no material difference in the following significant comments of the Economist:

It will be seen that the United Kingdom has given way to the United States as the largest coal producer, though, of course, the production of this country is still far ahead of any other in proportion to area and population. The report states that the total production of the world is about 660,000,000 tons per annum, of which the United Kingdom produces rather more than a third, and the United Kingdom and the United States together account for nearly three-quarters. Another table of considerable interest shows the proportion of the output which is sent abroad. Out of 225,181,000 tons produced in 1900, 58,405,000 tons were shipped abroad, the proportion exported being 26 per cent. In 1890 our exports were 38,660,000 tons out of a total production of 151,614,000 tons, or 21 per cent. In other words, while the home consumption has increased by 16.6 per cent., the exports have risen to the extent of 43.3 per cent.

In connection with this should be read the following from the London Financial Times, which holds that in spite of the advantage possessed by Americans being neutralized not a little by the great distances to which the coal has to be carried, Great Britain was placed last year at an even greater disadvantage than the United States in the advance of the price of coal. The Times says:

Last year the United Kingdom exported 58,000,000 tons of coal, an increase of about 2,500,000; Germany, 18,000,000, also an advance of about 2,500,000, and the United States, 7,500,000, an increase of over 2,000,000. The progress of America as a coal exporter is remarkable, the excess of exports over imports having increased by about 75 per cent. in two years. Germany is a large coal importer, her purchases being over 8,000,000 tons last year, which reduces her surplus of exports to about 10,000,000 tons; but the United States only imported 1,700,000 tons of foreign coal in 1900. Despite the progress of America as an exporter, it seems that American coal can only be profitably shipped to Europe under exceptionally favorable price and freight conditions. In the consumption of coal, as in the production, we have to give the "pas" to our American friends. The consumption of coal in the United States last year reached

the enormous figure of 239,000,000 tons, being an increase of 17,000,000 tons as against 1899. In the United Kingdom the consumption was 166,000,000 tons, an increase of about 2,500,000 only, and in Germany 99,000,000, an advance of 7,000,000 tons. France only consumed 46,000,000 tons, but showed an increase of over 3,000,000 tons as against 1899. Apparently, therefore, Great Britain made less progress as a coal consumer last year than either America or Germany, or even France. We can still, however, lay the flattering unction to our souls that the production per capita in this country is considerably greater than that of any other, not excepting the United States.

While this discussion of the relations of Great Britain and America as to the coal question is being continued on the older lines, another English paper, the Iron and Coal Trades Review of London, is beginning to appreciate the important part which oil is to play as a fuel, and to conjecture about its effect upon industry in general. It refers to the discoveries at Beaumont and the threat of invasion of cheap American petroleum, and makes the point that if the expectation in America shall be realized this country will not only have an addition to its already extraordinary advantages in the matter of fuel supplies, but that that will give an impetus to its export of coal and coke to European markets. It looks very much as if the Review was long-sighted, and that it consequently perceives the ultimate end of the development of petroleum as fuel. It does not mean a limitation of the coal-mining energies of the United States, but it does point to an enlargement of activities in that direction consequent upon the ability of the United States to compete better than ever with other nations in the coal markets of the world.

An Industrial Monument.

One of the latest and most characteristic products of Southern industry is a volume entitled "Cotton and Cotton Oil," just published at Charlotte, N. C. Its author is Mr. D. A. Tompkins of that city, who as an engineer has designed and had charge of the construction of many cotton mills, cottonseed-oil mills and fertilizer works, who has during the past ten or fifteen years been active in promoting every movement for the industrial progress of the South, and whose work, speeches and writings have been a powerful influence in the development of the cotton-milling and kindred industries. His store of information, based upon fifteen years' continuous life on a cotton plantation and an active career subsequently in engineering and manufacturing, seems to be exhaustless. He has already published four other volumes—"Cotton-Mill Processes and Calculations," "Cotton-Mill Commercial Features," "American Commerce: Its Expansion," and "Cotton Values in Textile Fabrics." In addition to preparing many addresses requiring wide range of practical knowledge and keen insight into the necessities of the industrial South and commercial America.

In his latest volume he has set forth accurately, succinctly, yet comprehensively, as perhaps no other man in the country could do, full information about the planting, cultivation, harvesting and preparation for market of cotton, the organization, construction and operation of cottonseed-oil mills, cottonseed meal and hulls as stock feed in connection with the production of beef, and the conduct of dairies and fertilizers as related to cotton-raising. In separate chapters he discusses plantation life before, during and after the war between the States, the differences in the manipulation of cotton, both in

the field and at the gin, wrought by the abolition of slavery, the growth of the cottonseed-oil industry and of the manufacture of fertilizers. The volume, of more than 500 pages, contains 127 illustrations, half-tone reproductions of photographs of machinery, of implements, the cotton plant, etc., five colored plates, three of them of especial interest as showing different stages of the growth of the cotton plant, and a large map, upon which is traced the quarantine line for splenic fever.

With this volume in hand one feels that little, if anything, more is to be said on the subjects treated by it. It is a safe guide for the investor, the student and the practical mechanic, and is a monument of the advance which the South has made as a cotton-grower and as a handler of the products of the cotton plant.

Fading of a Fad.

Revolutionary conduct near Chicago, Ill., to prevent negroes from the South accepting employment there was not necessary to demonstrate the real sentiment toward the negro felt at the North. Only let the negro enter any part of that section of the country in any number, and he will be treated worse than anywhere in the world. A great light of intelligence is dawning in that section, even upon the molders of public opinion there. But we have seen nothing as strenuous as the following suggestion in the Fall River Daily Herald:

The negro is going to live in the South for some years to come, and he is wanted in the South. But if he were not wanted there, the next step would be to exterminate him. He would not be welcomed North, East or West.

The Northern policy toward an erstwhile Northern fad has not been formulated more clearly. Events of the past two or three years prove, too, that it is a policy which the North seeks to put into execution whenever the opportunity presents itself. The fading of the fad promises common sense for the solution of a great problem.

In Huntsville's Vicinity.

In a letter to the Manufacturers' Record Mr. R. E. Pettus, president of the Chamber of Commerce of Huntsville, Ala., writes:

"Sidetracks are being laid to and excavations are about completed for our ninth cotton mill at this place, and parties are looking for a site for the tenth.

"The Madison Oil Co. expects to begin to bore its first well next Monday. It is prepared to bore to the depth of 3000 feet. Machinery is ordered for the second well. Some New York capitalists are interested in another company that controls about 25,000 acres of land. This company, it is said, will sink a number of wells.

"The West Huntsville Saw-Mill Co., whose mill and machinery were destroyed by fire a few days ago, will rebuild at once.

"Samples of phosphate were brought here this week from the western part of this county. Parties will soon investigate the find as to extent and quality."

Gen. Francis V. Greene, whose narrative history of "The United States Army" begins in the September Scribner's, was, it will be recalled, the general who received the surrender of Manila. Members of his family have taken part in every war of this country. One of his collateral ancestors was Gen. Nathaniel Greene of the Revolution, and his father was Gen. George S. Greene of the civil war. He himself is a West Pointer of the class of '70.

ECONOMIC ADVANTAGES OF THE SOUTH.

By Dr. Charles W. Dabney, President of the University of Tennessee.

[Written for the Manufacturers' Record.]

Next in importance to the education of all the people, black as well as white, upon which rests every permanent improvement, is the development of the agricultural resources of these Southern States. Every resource is important; cotton and iron, wood and marble—all are to be considered; but the agricultural resources of a country are the foundation of all industry. Whatever men do, they must have plenty of healthful, cheap food. In our discussion of these subjects we overlook too often the wonderful variety and extent of the agricultural resources of the South.

The conditions for the greatest and most valuable agricultural production are not, as many seem to think nowadays, vast areas of uniformly fertile soil spread out so as to admit of easiest cultivation by machine methods, like the "bonanza" wheat farms on the Red river of the North or the great cotton plantations in the delta of the Mississippi. Such areas can be advantageously cultivated in vast bodies by simple routine methods, and so may be successfully operated by individuals or by companies. They can be made to yield an enormous volume of product at minimum cost, but they do not make the largest interest upon the investment or support the largest population in the best manner. Such areas are always thinly populated at best, or cultivated by laborers who go and come with the seasons. It has been shown that the big wheat farms do not pay over 4 per cent. on an average of the years, and that best of the big cotton plantations do not pay over 6.

It is not "bonanza" or big plantation farming that makes a people rich.

Such farming may pay the few, but it is unfavorable to the interests of the many. Diversified agriculture, the cultivation of small, improved farms—what continentals call "petite culture," little farming—is the best for all the people. It is best because it brings the most wealth to the most people, and because it supports a great variety of other industries which act and react upon each other, and especially upon the agriculture of the country. Would he find a country susceptible of the greatest development, that is, capable of supporting the largest number of people in the greatest comfort, health and wealth, the economist looks not for a vast prairie of fertile soil with ample rainfall, as the ordinary farmer would do, but for a broken country with many kinds of good soils spread out at all elevations and with all kinds of exposure, and having the greatest variety of other resources for mining and manufacturing.

To begin with, people must have a variety of food materials, fruits and vegetables, as well as bread and meat. Men are of many talents, and want a variety of occupations. They even want a variety of scenery. As they become more civilized their wants multiply and become more and more varied, until finally the civilized community, engaged in a multitude of different industries, may be said to want almost an infinite variety of things. Hence it is evident that that country which can supply the greatest variety of products, raw and manufactured, and can find markets for them near home, is sure in time to become the wealthiest country.

For the greatest success in agriculture a people must have, besides a variety of good soils, a healthful climate with abundant rainfall, well distributed throughout

the growing season, and markets near at hand for its diverse product, meats, butter, cereals, fruits and vegetables. Manufacturers make the home market. For the highest success in manufacturing a country must have an abundance of cheap fuel or water-power, a variety of raw materials, a healthful climate, not too hot or too cold to permit of good work at all seasons, and an abundant supply of good cheap food, so that operatives can support their families in comfort while working at such wages as will enable the manufacturer to sell his goods at a profit in the world's markets. As the manufacturers make markets for the farmers, so the farmers make markets to a large extent for the manufacturers. Hence it is that in a real sense the best farming country is the best manufacturing country, and vice versa.

These well-known principles have been restated here for the purpose of calling attention to the great economic advantages possessed by the Southern States, especially those lying on either side of the Appalachian system. I know no other country in the world so rich in both agricultural and manufacturing resources. It is not necessary to enumerate them again for the readers of the Manufacturers' Record, but consider how wonderfully these two great classes of resources are varied and mingled in the South. Coal and iron, marble and hardwoods, copper and zinc abound throughout the upland regions of the South in the hills adjacent to the rich valleys. Here is a country that can support and employ an almost incalculable population. It is larger than all the manufacturing countries and departments of Great Britain, Belgium, France and Germany combined, and contains more coal, iron and woods than all of them.

In the Piedmont country we find the wheat, tobacco and the cotton fields in the immediate neighborhood of great water-powers. The coast region contains the great truck gardens of the continent alongside of almost inexhaustible deposits of phosphates. Where else can such a combination of resources be found in such a climate and under such skies?

Consider also the location of the Southern States as to this continent and to the world. Within one day of New York by express freight and within eight days of Liverpool, the central South has a great advantage in its location. Sixty million people live within a radius of 700 miles, the average day's run of an express freight, of Knoxville, Tenn., which we may take as the center of this portion of country, more people than can be reached within a like radius from any other point in America, for this circle includes all our great centers of population, from Philadelphia and New York to Chicago and St. Louis, and from St. Paul and Detroit to Mobile and New Orleans. The ports for this country are Baltimore, Newport News, Norfolk, Wilmington, Charleston, Savannah, Mobile, New Orleans and Galveston. Their proximity to the markets of the world are apparent at a glance. They are nearer to the West Indies and South America, our future great markets, and with the isthmian canal will be nearer to the East than those of the Middle and Eastern States. These are only a few of the conditions, familiar to everyone, which make the Southern Appalachian country the most promising in the world.

Mr. Edmonds was far inside of the

truth when he said in his address before the North Carolina Bankers' Association that the Southern States could, when fully developed, "duplicate the present agricultural output of the United States." He meant, of course, that they could duplicate the total values of agricultural products, not the identical products themselves.

I have shown in a previous article in this paper that the South could, with sufficient labor and capital, produce ten times as much cotton, for one item, as it now produces. This alone would equal the value of the present agricultural output of the entire country. When all mankind become as civilized as European peoples are now and wear as many clothes, it will require 50,000,000 bales of cotton to supply them. If the South keeps up its present proportion of the world's cotton supply it will sell 38,000,000 bales, which, at present prices, would be worth more than all our exports of wheat and meat. Something like this is true also of the cereals, of tobacco, of the animal products and of the vegetables and fruits which this wonderful land would yield.

From the standpoint of the European farmer, the soils of the South have as yet been scarcely scratched. With intensive methods, utilizing the vast stores of phosphates; with thorough cultivation of all arable soils, using each in the best way, and especially with manufactures in every valley to make markets for the heavier and more perishable products, the Southern States can and will produce ten times the agricultural product they now do; in fact, it is absurd to put measure upon the products of so vast a country with such varied and almost wholly undeveloped resources.

These things will come in time. What the South needs most now is to educate its people. So far a generous country and climate has permitted them to live comfortably and happily without much exertion. They need to be taught the possibilities of their wonderful country and how to utilize them. This can only be done through the improvement and extension of the public schools and by agricultural and industrial education.

USING LARGER PIPES.

Tendency of Drillers in the Beaumont Oil Field.

[Special Cor. Manufacturers' Record.]
Beaumont, Texas, August 10.

There are now twenty-three wells on Spindle Top Hill, and three or four more ready to come in. How many wells this Hill will hold is a problem of interest to outsiders. But there is no doubt of this statement being true. But work is being assiduously pushed on all outside wells, and with the persistence, pertinacity and doggedness displayed, it does seem that some of these parties will eventually find where the stream of oil runs into the Hill, if this is the way it gets there. It took two years for Captain Lucas to find oil out there, so other prospectors should not be discouraged this early in the game. And it is but fair to say they are not. Hard work is being done, and many disappointments have been met, but the faith of those who are boring in outside territory does not waver.

One of the wells, and the last one, to come in was the "Manhattan," which is located on one of the Hogg-Swayne tracts of land, on Block 38, right in the middle of a cluster of derricks. The well is a four-inch one, and is in good shape. This company is capitalized at \$300,000, and owns considerable property off the Hill, but when it began to look as if all wells off the Hill were dry, in order to protect its stockholders it bought a small tract on the Hill on the Hogg-Swayne

property and bored for oil, with the result stated. This company proposes to construct a million-dollar earthen tank for the storage of oil, which will be built on its property just off the Hill, and the oil piped there from the well. This will be the first of the great earthen tanks which have been built. It is very probable that the McFaddin No. 5 well of the Guffey Petroleum Co. on Spindle Top Hill will be a duster. This is not officially announced, and probably never will be, but the well is down 1200 feet and has not struck oil yet, which is deeper than any well on the Hill. This is the first known duster on Spindle Top Hill. One noticeable feature of all the drilling is that it is tending toward much larger diameters of pipe. The Citizens' Consolidated Oil Co., boring a well on the Hill, is down about 900 feet with a 10-inch pipe, and if it brings this well into oil with this diameter of pipe it will be the largest well ever drilled in this vicinity and finished. The Treadway Oil Co., boring on outside property, has even better record than this, for it is down 1400 feet with a 12-inch pipe, and what is more, proposes to go down 3100 feet. This, if accomplished, will be the deepest well in the field. The Treadway people assert that if oil is not struck at that depth they will go on down to 4000 feet if it is physically possible to do so. The National Oil & Pipe Co. expects to have its pipe line to Port Arthur finished tonight. It will require a couple of weeks more time to finish the pumping station, etc., but when that is done this company will be ready for business. It proposes to do a public carrying business, and will transport the oil of anyone to the seaboard for a consideration.

But by far the most important and good news to oil operators is the result of the hearing before the railroad commission of the State on oil rates. The oil men were not feeling very jubilant on their return, for the coal and lignite interests had put up a good fight, and it was further opposed by the railroad companies, all of whom were represented and opposed the reduction of oil rates. The hearing lasted two days, which is an unusual length of time, but the subject was thoroughly gone into, and the meeting was one of the largest ever had before the commission. After a day or two's thought the commission has come out with a tariff on oil for shipment in the State. It provides for a 12½-cent maximum rate in common-point territory, in which pretty near all the consumers are located, and goes down as low as five cents. It is much better than the oil men expected, and, of course, they are jubilant, as it will enable them to put their oil in every market in the State. The coal and lignite interests, it is announced, are about to form some kind of a combination to fight the introduction of oil, but on what lines this can be done with profit, or even with a semblance of success, it is hard to imagine. Their threat to sell coal and lignite at less than cost will hurt no one but themselves, and will not touch the oil men in any particular.

Kentucky Oil Fields.

[Special Cor. Manufacturers' Record.]
Somerset, Ky., August 12.

Somerset is the metropolis of the Kentucky and Tennessee oil field. Three years ago there was only a production of about 150 barrels per day at Slickford, in Wayne county, Kentucky. Since April of this year remarkable development has taken place in that county, and about two weeks ago W. G. Strubbe, president and general manager of the Kentucky & Tennessee Oil Co., brought in Dalton No. 1, which has proven to be the real gusher of the field up to this time. For a time

it flowed 2400 barrels per day, and at the present time is flowing forty barrels per hour. The well is thought to be a regular, steady producer of the capacity of not less than 700 or 800 barrels per day. Other small wells have been brought in, and as many as fifteen or twenty wells are being drilled.

The National Transit Co. has within the last sixty days completed a large compound pumping engine at Spurrier, Tenn., the present southern terminus of its pipe line from Somerset to Spurrier. It has just completed storage tanks here with a capacity of 100,000 barrels. It has a storage capacity in the field for about 40,000 barrels. It has completed a metallic line from Spurrier to Somerset, and it is understood that Mr. Joseph Seep, an official of this company, has recently ordered additional improvements, and it will erect an oil refinery at this place within a few weeks.

The largest oil company yet organized in the field is the National Consolidated Oil Co. Governor M. C. Alford of Lexington, Ky., and Hon. T. C. H. Vance of Louisville, Ky., are the chief promoters of this company, which will have a capital stock of \$5,000,000, and has already gained control of over 120,000 acres of land in Kentucky and Tennessee. Somerset is the metropolis of the oil development, and an oil-well machinery supply company has recently located at this place. The development of the southern part of Pulaski county is expected to be fruitful of good results.

Test of Oil for Fuel.

Not long since the initial trial of crude petroleum as fuel on the International & Great Northern Railroad was made at Palestine, Texas. It was conducted by a master mechanic, who, through service in California, is thoroughly conversant with the methods of burning oil in the most approved appliances. The test was witnessed by Mr. H. Booth, assistant general freight agent of the railroad company, and a dispatch from Houston to the Galveston News quotes him in the following description of it:

"The test was made on one of the company's most powerful engines, it being a 10-wheeler and of eighty-four tons. The 'battleship,' as the engine and others of that class are nicknamed at the shops, was turned out yesterday properly fitted up and ready for the test. A trial trip of a few miles was made, and it worked splendidly. The oil tank is sufficient for a 250-mile run, which is much further than a tender of coal will send a train. The smoke, which issues forth in volumes upon first firing up, soon disappears as the big machine becomes heated, making combustion more perfect. The engine was scheduled to pull passenger No. 2 from Palestine to Longview, making the first real run of an oil-burning engine on the line. If the experiment proves satisfactory, as there is no longer any doubt that it will, the line will be equipped to adopt the fuel. Switch engines will likely first be fitted up, and then passenger trains. In the handling of cotton it is believed that oil will greatly minimize the risk of loss by fire, as there will be no sparks from engines. The equipping of an engine to burn oil costs from \$300 to \$400. A very large item of the expense in preparing to use the liquid fuel is the cost of iron storage tanks, which it is figured should be placed not more than 100 miles apart."

May Pipe to Nashville.

Mr. W. S. Duckworth, a member of the Tennessee Southern Oil Co., is quoted in an interview at Nashville as saying that the field in which the company proposes to operate extends for about thirty-five

miles from a point five miles north of Murfreesboro to the southern part of Bedford county, with a breadth in the northern part of ten or twelve miles; that work of putting down wells will begin within two or three weeks, and that if the field proves to be what it indicates, a pipe-line company will be organized to pipe the oil to Nashville, and a refining company to receive, store and refine it there.

An Oil Handbook.

A work which will be found exceedingly valuable at present by many persons is the Derrick's Handbook of Petroleum, published by the Derrick Publishing Co. of Oil City, Pa. The first volume of this was issued in 1898, but such developments have occurred in oil since then that the second volume has been called for, bringing the record practically up to date. The preparation of these two volumes required an immense amount of labor, for the chronological record of the leading events in the history and development of the oil regions of Pennsylvania and neighboring States covers a period of forty-one years, and constitutes a sort of diary in abridged form of convenient shape for ready reference by the oil man. One of the most attractive features of the publication is the series of sketches of the lives of men who have made oil history. In addition are numerous statistical tables relating to the production and consumption of petroleum. These constitute, perhaps, the most important part of the work. The early statistics of petroleum were recorded by several compilers, and consequently there are many discrepancies among the published statements of the first twenty years of the business. The Derrick, however, has endeavored to substantiate or correct the earlier tables by going to original sources of information. Still further revision and correction may be necessary, though upon the whole the statistical information contained in this work will be found as accurate and reliable as it is possible to make it. Tables of daily quotations cover the entire history of the oil market.

OIL NOTES.

Facts About Petroleum and Its Uses.

An effort will be made to strike oil at Pike City, Ark.

It is reported that fuel oil has been discovered in Tishmingo county, Mississippi.

Plans are being made by the Chicago, Rock Island & Texas Railroad to use fuel oil in its engines.

Mr. J. A. Joulin of the Mobile Oil Co. has gone to Beaumont to arrange for a test for oil in Mobile county.

Contract has been let for oil machinery by the Alabama Oil & Gas Co., which will sink a well near North Decatur, Ala. Work of sinking a well for the North Alabama Standard Oil & Gas Co. at Falkville will begin soon.

The Johnson Iron Works of New Orleans has been figuring on estimates for three steel barges, each of 3500 barrels capacity, at the request of two of the largest oil companies of Beaumont, who desire to compare the cost of transporting oil in this way with that of piping it to Sabine Pass and New Orleans.

The new pumping system at the yards of the Newport News Shipbuilding & Dry-Dock Co., by which both of the great dry-docks may be emptied simultaneously, has been completed. The capacity of its pumps is 24,600,000 gallons an hour. They are operated electrically.

SHIPBUILDING AT MOBILE.

An Expert's Opinion of the Opportunities There.

Mr. E. E. England, secretary of the Mobile Chamber of Commerce, in a letter to the Mobile Register recalls the fact that as far back as July, 1888, Mr. C. F. Z. Caracristi, the engineering and mining expert now traveling in the South in the interest of the Manufacturers' Record, pointed to Mobile as an advantageous location for the construction of ships. He also quotes a recent letter from Mr. Caracristi bearing upon the same subject, as follows:

"Shipbuilding, I mean successful shipbuilding, depends upon environments, labor, fuel and supply conditions. If these are superlative the enterprise perforce must mature into success. Glasgow, Scotland, is an ample demonstration of this maxim. The supreme importance of Mobile as a shipbuilding center of the future rests upon its nearness to the coal, iron and steel centers of Alabama, and the natural facilities offered by its geographical position, together with its proximity to Central and South America.

"Mobile is the natural and logical shipbuilding center for ships of small tonnage for Latin America and the Gulf ports of the United States.

"I have not had time to fully investigate the possibilities of these sections, but am aware that 75 per cent. of the tonnage referred to will require constructional restoration within a very short space of time, and what point more naturally should receive the contracts for this work than Mobile, once a shipyard is constructed upon modern plans?

"I feel that it is to the interest of Mobile and the State of Alabama to foster with their utmost energies the realization of this enterprise. It will mean the advancement of every industry in the State and the fulfillment of my predictions of years ago. Look what Newport News and Richmond, Va., have done in the past few years on this very line, and yet we cannot compare the natural advantages of Virginia to those of Alabama for this purpose. It would be safe to estimate after the plant is fully in operation that a shipyard near Mobile would receive a tonnage of at least 100,000 tons per year. But few can realize what this means not only to Mobile, but to the Gulf. The actual investors reported to be interested in this enterprise are a sufficient guarantee that the project will be supported by sufficient capital to warrant and produce success."

WIDEAWAKE HAZLEHURST.

Industry and Improvement in the Mississippi Town.

In a letter to the Manufacturers' Record Mr. G. I. Ragsdale of Hazlehurst, Miss., writes:

"Since writing you last informing you that our county was in the market for the purchase of road-making machinery, the committee to whom this work was entrusted has awarded an order to the Austin & Western Company for about \$2000 worth of road-building machinery, and as soon as received and tested, and the demonstration is satisfactory, the committee will then place additional orders for about the same outfits as they have already purchased for five additional beats in the county.

"Our city council has taken the initial step toward putting a complete system of water-works and electric lights in this city. The plan is to issue \$35,000 or \$40,000 in city bonds, and an election to this end will be held in the city in the first week in September to decide the question. As it is the desire and will of the people,

there is no doubt but what it will go through.

"Copiah county is now preparing for the immediate erection of a modern courthouse to cost not less than \$50,000.

"The American Veneer Manufacturing Co. has been formed to manufacture all kinds of high-grade veneers, and it will also add to this plant a basket factory. Some of the machinery has already been purchased for this plant.

"The Mobile, Vicksburg & Kansas Railroad is nearing completion to Hattiesburg, Miss., and the survey runs from that point to Vicksburg, Miss., by way of Hazlehurst, Miss., which will put us in line to handle freights via Mississippi river, and besides will open up a very rich section of country.

"The fertilizer factory established here last season has introduced a special cotton fertilizer that surpasses anything of the kind ever sold or used in this country. Planters who have used it are agreeably surprised with results. The Hazlehurst Oil Mill & Fertilizer Manufacturing Co. will be compelled to increase the machinery of its plant in order to take care of the volume of business that will be offered it the coming season for fertilizer.

"Our people are getting on the progressive side of life, and, judging from present indications, many other enterprises will be located here, as there are opportunities and chances for investment that are attracting the attention of capitalists both at home and abroad. The people here fully realize the benefits that naturally arise from the establishment of these manufacturing enterprises, and are meeting all such propositions in a friendly and generous spirit."

American Coal in 1900.

According to the report of the United States Geological Survey the aggregate production of coal in the United States in 1900 was 219,965,917 long tons, valued at \$306,891,364, an increase over the preceding year of 14,412,353 long tons, valued at \$50,813,930. The report points to the wonderful progress in mining made by West Virginia. With but one exception the reports from this State have shown an increase from year to year for twenty years, the increase being about 1,000,000 tons a year. It has surpassed Ohio as a coal-producing State and is rapidly overhauling Illinois, which now stands second on the list to Pennsylvania. West Virginia produced in 1900 22,647,207 short tons, valued at \$18,416,871, an increase of 3,394,212 tons, or 17.6 per cent., and an increase in value of \$6,363,603, or 50 per cent.

The story of the race for supremacy in coal production between the United States and Great Britain is graphically illustrated by tables and comments. In 1868, the first year for which figures are available, the United States produced 31,648,960 short tons, or about one-third as much as Great Britain and 4,600,000 tons less than Germany. In 1877 the United States left Germany behind for good, having surpassed her production several times before. In 1900 the production of the United States was 50 per cent. greater than that of Germany. In 1868 the production of coal in Great Britain was 3.6 times that of the United States, in 1880 it was 2.3 times and in 1890 it was 1.4 times greater. In 1899, however, the United States took the lead, with a production 7 per cent. greater than that of Great Britain. In the thirty-two years covered the United States increased its production 750 per cent., while Great Britain increased its production but 120 per cent. In 1868 the United States produced 14.35 per cent. of the world's product and Great Britain 50 per cent.; in 1900 the United

States heads the list, with 32 per cent., Great Britain following with 30 per cent. The production in Great Britain in 1900 was 252,203,056 short tons, and in the United States it was 269,881,827 tons.

Rebuilding Jacksonville.

Since the great fire at Jacksonville three months ago 471 permits have been issued for new buildings, some of the permits being for as many as ten buildings. In publishing a complete list of these permits as an indication of what is being done, the Jacksonville Times-Union says:

"These permits are for the building of about 700 permanent structures, about two-fifths of the total number destroyed in the great fire. It may be set down as a general rule that, house for house, nine-tenths of the new buildings will be improvements on the old. For a short time succeeding the fire it seemed that rebuilding lagged, but within the last thirty days the change has been not short of stupendous. A notable feature of the rebuilding is that a large amount of new capital has been invested. Non-resident wealthy men have seized the opportunity to make investments here.

"It should not be lost sight of that rebuilding the burned houses has not checked, but rather promoted improvements in other parts of the city. On Bay street, west of Bridge, a 'building boom' is on; substantial brick stores are being erected by the dozen, and the whole character of the district is changing.

"Great as are the building operations now, they will be far greater in a month, and they will continue to expand for a year or more. In a few weeks the necessary preliminaries of issuing bonds will have been completed, and the erection of city and county public buildings to the extent of \$300,000 will begin. The building of the better class of residences has scarcely begun. People naturally restore their business places first; they must have their stores and workshops. Beautiful homes will come later.

"The building at this early day, three months after the fire, is going on at such rate and on such a scale that it seems a safe prediction that the force of the movement cannot expend itself until a new Jacksonville will replace the old, greater, more beautiful and more elaborate in costliness and architecture.

"It is believed at least that the people who were burned out will replace all that they lost, and that every dollar of new capital that has come and is still coming will be net gain."

To Launch Three at Once.

On Thursday, August 15, the three torpedo-boat destroyers, the Truxtun, Whipple and Worden, will be launched at the marine department of the Maryland Steel Co.'s works at Sparrow's Point, Md. The vessels are all alike, each 259 feet 6 inches long over all and 248 feet on the trail load-line; they are 23 feet 3 inches molded beam at the deck and 22 feet 6 inches at the water-line; the depth amidships is 14 feet 8 inches, and the specified trial displacement is about 433 tons, with a draft of six feet. They are to travel at the rate of thirty knots an hour, propelled by two screws and two triple-expansion engines capable of developing 8300 indicated horse-power. On the deck there will be conning towers, and upon each deck will be mounted a three-inch rapid-firing gun, two torpedo tubes and six six-pounder rapid-fire guns.

The new house-drainage system for Savannah has been completed. It is forty-nine miles in length, and cost the city \$264,417.50. Up to date 1000 house connections have been made. The work was begun in 1897.

FOREIGN TRADE.

This department is designed to set forth opportunities for the extension of the trade abroad of American manufacturers, and to record facts about the rapidly-developing commerce of the South.

CATTLE THROUGH GULF PORTS.

Probable Effects of a Large Packing-House Project in Texas.

An impetus to the exporting of cattle and packing-house products through Galveston and New Orleans is expected from the establishment at Fort Worth, Texas, of two large packing-houses by Armour & Co. and Swift & Co. According to a dispatch from Chicago, about \$1,000,000 will be spent in building the plants, preliminary to which the Fort Worth Stockyards have passed to the joint ownership of the great packing concerns. Commenting upon the project, Mr. G. W. Simpson, president of the stockyards company, is quoted as follows:

"The erection of these plants will give a great impetus to the live-stock industry of the Southwest. With a large number of cattle, hogs and sheep in Texas and in the territory tributary to Fort Worth, which is the natural railroad center for the great State, the growth of this market should be rapid, as Texas alone has 6,000,000 cattle. The enterprise will be a boon to the producer and consumer not only in Texas, but through the entire South. With the Gulf ports of New Orleans and Galveston there can be no doubt about the exporting of cattle and packing-house products direct to England from Fort Worth.

"Fort Worth has eight railroads, including the Chicago, Rock Island & Pacific, Missouri, Kansas & Texas, Texas & Pacific, Fort Worth & Denver, Cotton Belt, Houston & Texas Central, Fort Worth & Rio Grande, and the Texas and International & Great Northern will have their rails in there before next year.

"There has been a marked improvement during the last few years in the breeding and feeding of cattle and hogs in Texas, which has more cattle than any two States. A mixed ration of feed consisting of cottonseed, meal and hulls, crushed corn and chopped hay has placed Texas in the front rank as a cattle-feeding State. The mild climate enables the cattle and hogs to run in the feed lots the entire year."

The plan involves a donation of \$50,000 by citizens of Fort Worth and of \$50,000 by the stockyards company. Upon receipt of the news from Chicago Mayor Powell of Fort Worth and President Cooper of the Board of Trade issued an address calling a meeting "to take appropriate action looking to a ratification of the contracts which bring the great packing industries to our city, to welcome in no unmeaning terms those who are soon to become citizens of our city and county, to extend thanks to all who have contributed by word or deed to the successful termination of the effort to secure for Fort Worth industries whose magnitude is incalculable, and generally to congratulate one another on account of the greatest commercial triumph in the history of the State, and that Fort Worth will henceforth be the headquarters of the live-stock interests not only of Texas, but of the great and growing Southwest, thereby making and establishing Fort Worth as the last great central packing-house center in the world.

"The location of these two great packing-houses at this point means the establishment of dozens of different industries that are part and parcel of and go hand in hand with the packing-house interests. It means the expenditure of more than

\$2,000,000 in Fort Worth to begin with, and an immediate increase in population of about 6000 people. Come everybody, and let us celebrate in proper manner the greatest achievement in the history of Fort Worth, and one of which all patriotic citizens are justly proud."

NEW ORLEANS' TRADE.

Foreign Connections Improved by the Illinois Central Railroad.

Mayor Capdevielle of New Orleans has signed the ordinance permitting the Illinois Central Railroad Co. to continue its improvements on the water front, and it is announced that work on the new 1,500,000-bushel grain elevator will be started as soon as all legal requirements are complied with, and that the wharves so badly needed to handle the business of the company will be built as rapidly as possible. Mr. Henry Baldwin, the foreign freight agent of the railroad, who went abroad with General Manager J. T. Harahan to advance the interests of the road, returned to New Orleans last week and reported that by December next a largely-increased tonnage will be coming to that port to carry American merchandise to Great Britain, Germany, Holland, France and Mediterranean ports. Mr. Baldwin and Mr. Harahan visited the leading British ports, and the latter conferred with steamship owners at Rotterdam, Antwerp, Brussels and Paris, and they found a remarkable willingness on the part of steamship owners to co-operate in the plan. In an interview for the New Orleans States Mr. Baldwin says:

"The English ship-owners speak with the greatest admiration of New Orleans, and express a sincere confidence in her future as a famous port. General Manager Martin of the Leyland-West India Line told me that he believed that the possibilities at New Orleans were absolutely unlimited, and that expresses the sentiment of every one of them whom we met. The Englishmen seem to think that we have one of the greatest ports in the world, and show their faith by their words.

"I expect the increase in tonnage to begin some time in September, and by December it will be very marked and very greatly increased. The steamship men have promised us not only more ships, but bigger ones, and I should say that the increase in tonnage will amount fully to 20 or 25 per cent. Not only have we succeeded in getting the present lines which operate here to send bigger and more ships, but a new line will come in, the American-Mediterranean Line, running to Marseilles and Genoa, which will make our second line into Mediterranean waters. The disposition of all the lines is in our favor, and we are more than gratified at the result of our trip."

Encroaching America.

In a report on trade in Japan prepared for the British legation at Tokio, Arthur H. Lay writes:

"The United States continues to encroach on spheres of trade which were formerly considered under the exclusive control of the United Kingdom or other nations. American competition is now a permanent feature of the import trade of Japan, and is worthy of the careful attention of British manufacturers. The geographical situation of the United States with regard to Japan and the eagerness with which American manufacturers are seeking a market in this country will make her a competitor more and more formidable as time goes on. In 1900 Americans again secured a number of valuable contracts for the delivery of

goods in 1901, including one for rails, which was estimated at £72,000. Among the reasons for the very large figures to which the import trade from the United States into Japan rose in 1900 was the fact that the extensive orders, the execution of which was undertaken there in the preceding year, included 20,000 tons of rails, which at the high price then prevailing would account for, say, £160,000. A large quantity of electrical machinery for tram lines and electric lighting and bridge work and wire, as well as flour, are also included in the returns. Telephone cable was at one time a United States monopoly, but now German makers are fulfilling large orders for it. British manufacturers, owing to the high prices asked for, have so far been unsuccessful in obtaining any contracts for this material."

Sugar-Mill Shipment.

The Whitney Iron Works of New Orleans shipped last week fifty carloads of sugar-mill machinery for Cuban plantations. This is said to be the largest shipment of sugar machinery that has ever left the port of New Orleans.

Galveston's Increasing Exports.

The value of exports from Galveston in July was \$4,676,411, four times the value of those of July, 1900. Since January 1 the advance in the value of exports at that port over the same period last year has been nearly \$23,000,000.

Notes.

During July the exports from New Orleans amounted to \$7,863,646, an increase over those of July, 1900, of \$1,658,631.

During the week ended August 10 there were exported from Baltimore 2,135,260 bushels of wheat and 64,218 barrels of flour.

An average of 125 carloads of coal have been received daily for the past few days at Pensacola, where they are loaded rapidly on vessels bound for Tampico.

With Dr. W. T. Harris, United States commissioner of education and editor-in-chief, a new edition of Webster's International Dictionary has just been issued, and brings that authoritative publication again abreast of the growth of the language. A decade has passed since the International was first published, and the years have been full of changes and growth in life and knowledge and achievement, changes that have been reflected in the language and that must now be registered in the dictionary. A Supplement of additional words has therefore been added to the International to include the thousands of new words that have come into literary use, the old words that have changed their meanings, the obsolete words that have been revived. The same ideals and principles, so thoroughly approved by experience, which were followed in the body of the book, governed the work of the Supplement. There has been the same survey and scrutiny of a great mass of words, the same careful selection of such as merit a place of permanence, and the same studious and thorough explication of meanings in the forms most easily understood. The compiler's needs for a reliable and usable guide to the proper use of English words have been deliberately preferred to the ability to boast of a huge, unwieldy vocabulary. The best scholarship and expert knowledge in the country have been employed on the Supplement to make it equal in every respect to the main vocabulary. The publisher of the International is the G. & C. Merriam Co., Springfield, Mass.

RAILROADS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

Showing of the Southern.

The preliminary report of the Southern Railway for the fiscal year shows that the average mileage increased to 6424.94 miles; that the gross earnings for operating, not including the St. Louis division, were \$33,607,581.85, an increase of \$2,219,568.99, or 7.07 per cent.; that operating expenses, including taxes, were \$23,477,551.06, an increase of \$1,505,918.39, or 6.85 per cent., and that the net earnings from operations were \$10,130,060.19, an increase of \$713,648.60, or 7.58 per cent. The increase in expenses, amounting to about \$1,500,000, includes \$745,000 for maintenance of way and structures, \$235,000 for maintenance of equipment and \$490,000 in conducting transportation. The increase in the cost of coal was responsible for about \$278,000 of this last item, and the rest was due to train and station expenses and the cost of operating the barge line on the Mississippi river.

Improvements at Mobile.

The work of relaying with 70-pound steel rails the New Orleans division of the Louisville & Nashville Railroad has been completed to within fifteen miles of Mobile. The new brick freight depot at Mobile is practically completed, and as soon as the transfer to it from the old depot has been made improvements will be undertaken at the wharf property of the railroad company, including the construction of a large shed and the dredging to a depth of twenty-three feet at mean low tide of the entire wharf property of the company, which will be then devoted to import and export business.

Another Georgia Project.

Petition for charter is in course of advertising incorporating the Flint River & Gulf Railway Co. The road will be about ninety miles long, and run from Ashburn, Ga., by way of Sylvester and Camilla to Bainbridge, Ga., passing through some of the best timbered and farming lands of the State. J. C. Turner, chairman; W. N. Spence, T. R. Bennett, secretary and treasurer, of Camilla, Ga.; J. E. Toole, H. C. Allen, E. J. Willis of Bainbridge, J. S. Westberry, C. A. Alford, B. J. Sloan of Sylvester, J. S. Betts, J. S. Shingler, W. A. Murray of Ashburn appear as incorporators.

No Immediate Extension.

Mr. Fairfax Harrison, one of the purchasers of the Blue Ridge Railroad in South Carolina, informs the Manufacturers' Record that no immediate extension of the road toward Rabun Gap is contemplated. Public notice was given of the purchasers' intention to apply for a charter not only to operate the existing Blue Ridge Railroad, but to extend the same west of Walhalla in the direction of Rabun Gap, in order that the new railway company may have the same charter rights as the old Blue Ridge Railroad Co.

Through Fertile Mississippi.

The projectors of the Alabama, Mississippi & Gulf Railroad met at Memphis last week and heard the report of Capt. A. F. Farrar of Jackson, Tenn., the chief engineer of the road. It is proposed to build the road about seventy-five miles long from a point opposite Tupelo, Miss., to Water Valley, and thence to Clarksdale and Friar's Point, where connection will be made with steamers for New Or-

leans, Memphis and St. Louis. The route of the proposed road is through a fertile section of Mississippi, and passes through seven towns.

Another Trolley Plan.

The plan of a railroad between Washington and Point Lookout, Md., has been revived in the project of what will be known as the Washington, Leonardtown & Point Lookout Railroad Co., with R. C. White of Delaware, president, and Dr. C. R. Morgan, secretary, and which proposes to operate a trolley line through Southern Maryland. Philadelphia capital is said to be behind the project.

Improving a Bridge.

The work upon the Southern Railway of replacing seven of the truss spans over the Congaree river at Columbia, S. C., with seven plate girders, each eighty feet in length, is being done by the Phoenix Bridge Co. The balance of the bridge, three truss spans, aggregating 462 feet 6 inches, will not be changed.

Through Zinc Fields.

It is reported that the Choctaw, Oklahoma & Gulf Railroad is to extend its Jacksonport branch from Jacksonport through the zinc regions of Sharp and Lawrence counties, Arkansas, and on westward to Harrison, where it will connect with the St. Louis & San Francisco Railroad.

Pushing to the Terminus.

Twenty-two miles of track have been laid on the Carolina Northern Railroad from Lumberton to Page's Mill, S. C., and it is expected that the entire road to Marion, S. C., will be laid within two months. Several saw-mills have already sprung up along the road.

Railroad Notes.

Palmetto, Fla., has guaranteed to the United States & West Indies Railway Co. a depot site and right of way.

Quarterly reports of railroads operating in Mississippi show an increase in their net revenue compared with the quarter ended July 1, 1900.

The International & Great Northern Railroad Co. has begun preparations for the erection of a modern depot building at Houston, Texas.

The directors of the Washington & Annapolis Electric Railway Co. have decided to increase the capital stock from \$1,500,000 to \$2,000,000.

Assessments of railroad properties in Mississippi for 1901 show an increase over those of 1900 of \$1,581,206. The mileage increased 138.21.

Articles of incorporation have been filed for the Harlow & Northern Railroad to extend eighteen miles in Calhoun and Dallas counties, Arkansas.

A syndicate of Boston men are considering a project of a high-speed electric railroad between Kansas City and St. Joseph, Mo., a distance of fifty-three miles.

The railroad companies in Tennessee, aggregating 2985.59 miles in length, have been assessed for this year at \$56,056,114.30, an increase over the last biennial assessment of \$872,841.36.

Contract has been closed for the construction of a 22-mile link between Benton, Ark., and Butterfield, by which the Choctaw, Oklahoma & Gulf Railroad will have a direct line into Hot Springs.

Preliminary figures for the fiscal year of the St. Louis Southwestern Railroad show gross earnings \$7,387,000, an increase of \$1,478,000; operating expenses, \$4,632,000; net earnings, \$2,755,000.

Citizens of Nashville, Tenn., at an election last week authorized the city to subscribe for \$1,000,000 worth of the stock of the Nashville & Clarksville Railroad, of which Mr. Jere Baxter is president.

Two engineering parties have been organized at Morganton, N. C., to complete the location of the Trans-Appalachian Railroad, which has already been surveyed from Butler, Tenn., to Lincoln, Tenn.

The International & Great Northern Railway Co. has been granted authority to issue bonds to the amount of \$20,000 per mile on its Fort Worth division, formerly the Calvert, Waco & Brazos Valley.

President J. H. Warner of the Chattanooga Electric Railway Co. announces that about \$50,000 worth of new machinery will be installed to provide power for the Sherman Heights line, now being laid with 60-foot rails.

The Charleston & Kanawha Valley Power & Railway Co. has been chartered at Charleston, W. Va., to build and operate an electric railway connecting Charleston, St. Albans and Montgomery. The capital stock is \$500,000.

The Commercial Club of Gadsden, Ala., is endeavoring to promote a 17-mile extension of a branch line of the Louisville & Nashville Railroad from Oneonta to Gadsden, which passes through large tracts of coal and iron-ore lands.

The survey has begun at Decatur, Ala., for the Decatur, Danville & Southwestern Railroad. Mr. F. J. O'Connell of Chattanooga, vice-president of the company, is quoted as stating that work will begin within sixty days both at Jasper and New Decatur.

The car shops at Augusta of the Georgia Railroad Co. are turning out four completed cars a day of a lot of 200 box cars, fifty coal cars and fifty stock cars. The iron castings for these cars were made at the Lombard Iron Works and the Georgia Iron Works.

It is announced that trains will be run through from Brunswick to Savannah after August 18 by way of the new Brunswick & Birmingham Railroad and the Seaboard Air Line, with which the new road made connection at Thalmou, twenty miles from Brunswick, two weeks ago.

Chief Engineer Michael L. Lynch of the St. Louis Southwestern Railway Co. of Texas informs the Manufacturers' Record that the Dallas extension will be about thirteen miles in length, and contracts will be let shortly, the date as yet being indefinite. Rails and equipment are already provided for.

The city council of Bessemer has granted a charter for the Steel Cities Railway Co., which has been surveyed from Ensley to Brighton to pass through Bessemer, a provision of the franchise being that work must be completed within the city within twelve months, and on the entire road within eighteen months.

The gross earnings for the fiscal year of the Kansas City, Memphis & Birmingham Railroad Co. were \$2,042,002, an increase of \$338,558; the operating expenses \$1,386,847, an increase of \$214,178; net earnings \$655,155, an increase of \$124,390, and charges \$176,246, a decrease of \$4004, leaving a balance of \$128,304.

Mr. F. W. Valliant, chief engineer of the Arkansas & Choctaw Railroad Co., has announced that on August 26 he will award the contract for the sections of the road in Oklahoma and Indian Territory. The completed road will be 300 miles long, extending from Arkinda, on the Arkansas line, through parts of Louisiana, Indian Territory, Oklahoma and Texas to Wichita Falls, Texas.

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

LUMBER MARKET REVIEWS.

Baltimore.

Office Manufacturers' Record,
Baltimore, Md., August 14.

In the local lumber market business still represents about an average volume, and on the whole the conditions are favorable for a steady and substantial movement during the balance of the year. North Carolina pine is selling well, and values firm throughout the list, while the demand, both domestic and foreign, is showing a marked improvement. Georgia pine is in liberal receipt, and prices very steady. White pine shows some good features, there being a fair inquiry, with stocks well assorted and values firm. In the hardwood market some local business has been developed, while out-of-town buyers have been in the market during the week. Hardwood exporters are more encouraged by the outlook, and the prospect of a better volume of trade is somewhat improved. The London Timber Trades Journal of the 3d inst., in reviewing the market, says: "A continued healthy consumption of wood is reported from all parts of the country, which should at no distant date have a steadying effect on the free-on-board market. London still remains the weakest point; the present stocks and the fear of heavy consignments at the back end of the season prevent any improvement in values, and the prices realized at the auctions still show a declining tendency. In the mahogany and hardwood trade a general tone of steadiness prevails; the market is quiet, and the business being transacted is on the basis of last sale rates. The demand for consumption is likely to slow down considerably for a week or two; at all events, there will be a lull in the wholesale trade, as no public sales have been held this week, and there will be none until well into the month. In the meantime it is hoped the yard-keepers will draw freely from dock stock, thus giving space in the sheds for the fresh autumn supplies. This always has a great effect upon the market, as when the sheds are overstocked it generally has a tendency to lower values and induces dealers and buyers to await the course of events, hoping to benefit thereby. It is a moot question as to how prices will go in the future, as all depends upon the quantity, size and nature of the supplies coming forward. At present the stock in hand is very light, and only just enough to keep the market going."

Norfolk.

[From our own Correspondent.]
Norfolk, Va., August 12.

The operations of lumbermen in this section so far during August have been characterized by unusual activity for this period of the season. An increased demand for North Carolina pine has developed, and the majority of mills are now busily engaged on orders for prompt and near future delivery. From Northern and Eastern sources the inquiry is greater than usual, and lumber is wanted in round lots, and generally for prompt delivery. In dressed lumber planing mills are generally rushed with orders, and are working overtime. A fairly active movement may also be noted in rough lumber, in which 10-inch box plays an important part. There is also a better demand for edge box in the rough. Climatic conditions of late have restricted operations in air-dried lumber, but with a settled dry spell prices would appreciate. The foreign demand for the better grades

of kiln-dried North Carolina pine is now a feature, and several large shipments for the United Kingdom and Continent were made last week. The operations among hardwood dealers are of better volume, and the market for oak, ash, poplar and other woods has taken on a better form. Shipments continue only moderate, on account of the unsettled state of the market abroad. The local demand for all wood products continues to improve, and material for consumption in the city proper and at suburban points is in good request. The offering of vessels for the carrying trade is light, and rates are steady at \$2.50 to New York and \$2.75 to \$3 to Sound ports and eastward. The schooner Carrigan was chartered this week to load lumber in James river for New York at \$2.50 for dry and \$2.80 for green.

Charleston.

[From our own Correspondent.]
Charleston, S. C., August 12.

A steady trade in lumber and other wood products has characterized the market here so far this month, and the demand from the usual sources continues to show improvement as the season passes. Prices throughout the general list are firm for the better grades of lumber, and about steady for inferior stock. During the past week the following shipments of lumber were reported: For New York schooners Nelson E. Newbury with 540,000 feet and Annie C. Grace with 375,000 feet. The schooner Anna cleared for Elizabethport, N. J., with 325,000 feet of lumber; schooners Eva L. Ferris with 550,000 feet and Mary S. Bradshaw with 300,000 feet, both for Philadelphia. The Clyde Line steamer Navahoe cleared for Boston with 82,000 feet. The total clearances for the season amount to 48,364,339 feet, against 55,538,727 feet last season. The activity among mills at Georgetown and vicinity is very decided, and both the trade in cypress and yellow pine is active, with free shipments. The Gardner & Lacey Lumber Co. is very busy at the moment, and making large shipments of cypress to Baltimore and other points. The Winyah Lumber Co. and the Atlantic Coast Lumber Co. are both having a remarkably good season. Coastwise freights still continue to rule steady for good boats. Lumber rates to New York are quoted \$4.75, Boston \$5, Baltimore \$4.50 and Sound ports \$5; crossies to New York \$5.

Savannah.

[From our own Correspondent.]
Savannah, Ga., August 12.

All indications point to a more than average business in wood products in this section of the State during the early fall and winter months. The demand at the moment for lumber is greatly in excess of last year at this period of the season, and mills are now very busy on orders taken some time ago. Prices all along the line seem to be hardening, as stocks are now about equal to the demand, and some grades are very scarce indeed. A large number of vessels have arrived during the past ten days, which have been detained by light winds, and at present there is great activity in shipments. At Brunswick there is also a very healthy movement among lumbermen, and those engaged in the trade seem to regard the outlook as very encouraging. During the month of July Brunswick shipped to foreign ports 2,881,000 feet of lumber and timber. The coastwise shipments amounted to 13,948,000 feet of lumber, 1,188,000 pieces of shingles and 56,546 pieces of crossies. Large quantities of lumber are now awaiting shipment, and all schooners or other vessels arriving meet with quick dispatch. Among the wharf improvements going on at Brun-

wick to facilitate shipments of goods, the Downing Company, which is extending its business, has fitted up the McCullough property, and is now shipping large quantities of Georgia pine products. The sawmills throughout the Brunswick section are all very busy, and a number of new plants are being installed at several points along the Brunswick & Birmingham Railway. The Bladen Lumber Co. is making extensive improvements in its plant, located at Bladen, nineteen miles from Brunswick. At Darien the activity among lumbermen is now greater than at any time this year, and it is expected that both foreign and coastwise lumber and timber shipments will be greater than usual during the months of September and October. Among the charters last week were the following: Bark Charles Loring, Brunswick to New York with lumber at \$5.50 and switch ties at 18 cents; brig Alice Bradshaw, Brunswick to St. John, N. B., with lumber at \$7, and schooner Herald, Brunswick to Kingston, Jamaica, with lumber at or about \$8.50.

Mobile.

[From our own Correspondent.]
Mobile, Ala., August 12.

The tone of trade in all avenues of the timber and lumber industry of this section shows very little change, and the market is generally very steady. Timber is moving slowly, and stocks are generally light, while values are likely to show a higher range, as mills at Brewton, Ala., are said to have shut down indefinitely. Sawn timber is now quoted at 11½ to 12 cents, 40-foot basis. Hewn timber is dull and nominal. The bark Wolfe cleared last week for Havre with 7872 cubic feet of sawn timber and 585,592 feet of lumber. There is some demand for hewn oak at 15 to 18 cents per cubic foot. Hewn poplar is quoted at 12 to 12½ cents per cubic foot. The demand for lumber from Cuba and South America is more pronounced, and of the 4,000,000 feet going forward last week, over 3,000,000 feet went to these points. There is a good demand for lumber from points in the interior; the mills on the Mobile, Jackson & Kansas City Railroad are shipping about 4,000,000 feet per month to Northern points. Rough hard lumber is quoted \$13.50 to \$16.50 per thousand; merchantable, \$10 to \$11; flooring, \$8 to \$14; ceiling, common, \$7 to \$11, and heart, \$18 to \$20. The cypress shingle trade is quite active, and prices are firm, with timber rather scarce. Business at Pensacola continues to show a satisfactory volume, and, although the offering of vessels is light, there is a steady trade in progress. Stocks of timber are not excessive by any means, and it is thought that values must advance in the near future. There is quite a good demand for vessels to carry lumber to South America and Cuba. Among the charters reported last week the following were taken: Italian bark Giulia, 1287 tons, from Ship Island or Pensacola to Montevideo or Buenos Ayres with lumber at or about \$13.75; bark C. W. James, 825 tons, from the Gulf to Rosario with lumber at \$16; bark Simpson, 715 tons, from Pascagoula to Rosario with lumber at \$15.75, and schooner Asa T. Stowell, 320 tons, from Pascagoula to Kingston, Jamaica, with lumber at \$9.25.

Memphis.

[From our own Correspondent.]
Memphis, Tenn., August 11.

While business has shown little or no actual improvement, there have been more inquiries coming forward than for several weeks past. Advances from foreign resident agents are to the effect that the export division of the market is in better shape and that the prospects are for a revival of activity in that quarter. Ash,

of goods, the is extending McCullough large quantities. The saw-wood section number of new several points. Ingham Rail Co. is making its plant, miles from the activity center than at expected that lumber and greater than September charters last. Ark Charlen York with ties at 10 Brunswick to at \$7, and to Kingston, out \$8.50.

dent.] August 12. nities of the of this sec- e, and the y. Timber e generally to show a wton, Ala., indefinitely. 11½ to 12 umber is dull e cleared cubic feet et of lum- e hewn oak ot. Hewa cents per iber from more pro- feet going 0,000 feet is a good in the in- Jackson shipping to North- is quoted merchant- \$14; cell- rt, \$18 to is quite h timber Pensacola volume, essels is progress- e by any nes must There is to carry Cuba. st week au bark and or Buenos \$13.75; rom the 6; bark ould to 5, and s, from a, with

popular and red gum constitute the best sellers in that direction at the moment, though some shipments of oak, especially plain white and red, with some quartered white, have gone forward at good prices. The domestic trade during the week has presented few new developments. Traveling representatives of the large firms here who are just back from the East report that the outlook in that quarter is considerably better. The middle West has been a fairly active buyer, considerable new business developing in that quarter. Plain red oak still constitutes one of the best sellers on this market. Some of the larger firms who make a specialty of this item have fair stocks of this wood, though, as a rule, the holdings here are light, especially in the most desirable thicknesses—in and under, as low as five-eighths-inch stock. There has been some improvement in the call for quartered white oak. Stocks are all that could be desired at the present rate of consumption. There has been little change in quartered red either as to quantity of stock or character of demand. Poplar continues to go at a most gratifying rate, with the result that offerings here show practically no accumulations; in fact, the greatest difficulty is to be found in securing this wood in the desirable thicknesses and lengths. This is particularly true of the upper grades of dressed stock. Cypress is possibly the most active wood in comparison with the amount offering here, as so much of this is sold on contracts that call for sufficiently frequent deliveries to take up practically all the mills or the leading firms here have on hand. Cottonwood box boards have moved fairly well and the upper grades have shown some improvement, though commons and culls are as lifeless as anyone could imagine, while stocks of the latter are sufficient for all needs of the trade for some time to come. Gum is a rather hard wood to gauge at the moment. There is some movement in the red 3x9, though outside of this there does not appear to be any activity worth noting. Dimension stock is in moderate call and good prices are obtainable. The log problem is becoming a somewhat serious one, as there are fewer logs in sight at the moment that are available than usual at this season of the year. There has been no material change in the condition of the soft woods. The demand for these is still phenomenally large.

Beaumont.

[From our own Correspondent.]

Beaumont, Texas, August 10.

The market has felt the effect of the rains more this week than at any time since they fell. The demand has been vigorous. Several of the mills have been forced to withdraw their salesmen from the road on account of having sold more lumber already than their stock will permit their shipping. The stock at one big mill, which cuts 100,000 feet per day, has got down to 1,300,000 feet, something never before heard of for a big mill. The average stock at the long-leaf mills is equal to about 4,500,000 feet instead of 6,500,000, as is usually carried. The volume of business the past week has exceeded anything known before since last January: 2x4 piece stuff has advanced 50 cents per M feet within the last ten days. Other items of piece stuff are also going up. Many orders for dimension are coming in at \$15, whereas a month ago \$14 was the best price obtainable where one had a good assortment of stock. Finishing, flooring, ceiling, siding, partition and all items on the left-hand side of the list, consisting principally of finished planer lumber in star and clear grades, are selling at strictly list prices. It is quite probable that there will be an increased list

put out by many of the mills before another thirty days goes around. There will undoubtedly be better prices realized for lumber during the remainder of this year than have ever before been obtained for lumber in this country. The outlook for a good cotton crop is more than promising. In South Texas it is practically assured, and is the first crop they have made in that section of the State for three years. Business is booming as a result in South Texas. The crop is very good all over the State, however, and predictions of a 3,000,000-bale crop are freely made by the traveling men. The corn crop in this State is also very fine, and there is little doubt but what good crops all over the State will be the result of this year's work. Of course, it is too early yet to tell what the prices will be, but unless these are below the cost of production, which is not likely, there will be good times in Texas. Add to these reasonable causes on which to expect a good lumber trade the fact of the great shortage of lumber and it will be easily seen that very high prices may be expected to reign for the remainder of the season. There is considerable difficulty experienced in getting 12-inch boards, as they are perhaps the shortest item on the list. Many of the mills have to ship them green, not being able to get any on hand in a dry state longer than 14-foot, and the demand for them is something enormous; 2x4 is rapidly disappearing in desirable lengths, while in the clear stock there is a great shortage of flooring, ceiling and siding lumber in four and six-inch widths. The Western trade is not as active as it was a while back with reference to Texas mills and orders, for the reason that there is no stock in this country to sell them. There is a brisk enquiry, and doubtless many sales would be effected had they the material to ship, but as they have only a small supply at most points, the mills prefer to ship it to their Texas friends. The timber trade continues to maintain its high values and enormous demand. The railroads are still using great quantities of ties, guard rails, stringers and caps, and it looks as if they could not be supplied. The demand also for structural timber in the erection of buildings is very active, and many bills of this character are on the books. The call for sap ties is especially great, and possibly all the orders now in this district for this commodity would in the aggregate amount to 1,000,000 ties, or say 32,000,000 feet of lumber. The export business has not revived in the least, and in this line there are no transactions worth recording aside from the Mexican business, which is very good. There seems to be an era of prosperity in the sister republic as well as with us, to judge by their lumber demands. The mines are particularly using large quantities of material, while the railroads are, like those of Texas, unable to get enough. There is also a good deal of yard stock for the dealers being shipped into the republic. Mr. John Henry Kirby expects to return to this section during the coming week. It will be remembered that he is the organizer of the Kirby Lumber Co., which is buying several of the large plants down here. Two of these deals are virtually closed, involving the transfer of \$3,000,000. Upon Mr. Kirby's return further particulars of this organization will doubtless be given out.

Lumber Notes.

Receipts of lumber at the port of New Orleans for the week ending the 9th inst. amounted to 3,060,723 feet, and for the season to 138,955,358 feet, against 104,525,385 last season.

Shipments of lumber from the port of Mobile last week were mostly to Cuban

and South American ports, and aggregated 3,684,990 feet. Sawm timber shipments amounted to 7872 cubic feet.

The Bull Lumber Co. of Norfolk, Va., is having a two-story airtight steam-drying lumber building erected at Disputanta, Va. This company is to have a branch track laid from its mills, to be used for the hauling of logs.

Among the new manufacturing enterprises to be erected at Columbus, Miss., at an early date is a sash, door and blind factory. The company will at once apply for a charter, and when granted will commence work on the factory.

It is understood that the Gray-Noble Lumber Co., doing business on the Savannah, Florida & Western Railway between Dupont and Homerville, has been dissolved, Mr. Henry Gray retiring from the firm. The business is to be continued by Mr. Noble.

The furniture factory at Warrenton, N. C., recently chartered, is now nearing completion. Active operations will probably begin about November 1. The forests in Warren county abound in pine, oak, ash, hickory and maple, and it is expected that the enterprise will be successful.

The J. C. Brown Lumber Co. of Marinette, Wis., has sold to the Weyerhaeuser Syndicate 70,000 acres of pine land in Louisiana for \$650,000. The pine is located in the parishes of Vernon, Sabine, Calcasieu and Natchitoches. There is said to be over 500,000,000 feet of pine on the tract.

The Perkins Lumber Co. of Augusta, Ga., has received a contract to furnish lumber and other building material for the new barracks, office and officers' residences on Sullivan's Island. The contract calls for 100 carloads of the best product of Perkins Company's mills, and will represent \$300,000 when completed.

Mr. E. L. Moore of Valdosta, Ga., has purchased R. F. Goety's saw-mill and timber, which is located on the Brunswick & Western Railroad thirty miles west of Waycross. The Goety mill has a capacity of 30,000 feet of lumber daily, being located near a fine body of timber. The purchase price for the plant was \$30,000.

A fire last week in the main warehouse of the Haffner-Lothman Sash & Door Manufacturing Co. of St. Louis completely destroyed two large buildings, partly consuming two adjacent lumber-yards. Mr. Lothman estimates the loss at \$200,000, with \$300,000 insurance. The destroyed buildings will be rebuilt at once.

The work on the Old Dominion Creosoting Co.'s works at Money Point, near Norfolk, is being pushed to completion, and the plant will be in readiness by September 1. A cargo of creosoted lumber left the Norfolk Creosoting Works at Money Point last week for Cape Tormentine, Canada. The cargo was valued at \$6800.

The Montgomery, Hill & Fulcher Hardwood Dimension Saw-Mill Co. of Memphis, Tenn., has been incorporated by Mack A. Montgomery, George R. Hill, Hugh B. Hill, Harry M. Hill and Joseph W. Fulcher. The capital stock of the new company is \$25,000. Hardwood dimension stuff, blocks, pins, etc., will be manufactured.

Ex-Senator Charles T. Westcott and Messrs. William E. and Thomas Trenchard of Maryland have purchased a large lumber mill and 1000-acre tract of timber land in Northumberland county, North Carolina. They will take charge of their purchase on the 15th inst. The Messrs. Trenchard and John G. Westcott will manage the business.

Shipments of lumber from Orange, Texas, for the month of July are given as follows: Litcher & Moore Lumber Co. 3,244,408 feet, L. Miller Lumber & Shingle Co. 2,353,476 feet, Orange Lumber Co. 1,873,423 feet, Wingate Lumber Co. 2,494,407 feet, Bancroft Lumber Co. 1,320,070 feet and Alexander Gilmer 2,330,692 feet, a total of 14,116,476 feet.

The Tifton Lumber Co. of Tifton, Ga., has been incorporated, with a capital stock of \$10,000. Messrs. J. J. O'Neil, W. C. Jenkins and others are the incorporators. The headquarters of the company will be at Tifton, and it will do a general planing-mill business, adding variety works and other lines later. The plant will have a capacity of 30,000 feet of dressed lumber daily.

The big lumber plant of the Strong Lumber Co. at Bristol, Tenn., now under construction, will soon be completed. The company is also pushing the work of building tramways through its 30,000-acre boundary in Carter county, East Tennessee. It is expected that the new plant will be in operation and turning out 100,000 feet of lumber daily within the next two months.

The saw-mill plant and lands of the Berry Bros. of Enterprise, Miss., recently purchased by the Brookpark Lumber Co. of Minnesota, has been taken charge of by the latter parties. The new company has commenced to construct five up-to-date dry-kilns and to erect tenement-houses. The new plant will be equipped with the most modern machinery. The Brookpark Lumber Co. will expend between \$40,000 and \$50,000.

The following vessels were cleared from Jacksonville, Fla., last week: Schooner Daisy Farlin for New Bedford with 342,598 feet of lumber, and the Clyde Line steamers Carib for Boston with 350,000 feet of lumber, 1200 bundles of shingles, 2000 crossies and other cargo; the Algonquin for New York with 128,500 feet of lumber, 4500 bundles of shingles, and steamer Seminole for Boston with 260,000 feet of lumber, 4100 crossies and miscellaneous freight.

Commercial statistics furnished by the Commercial Club of the port of Pascagoula, Miss., gives the following interesting figures for the fiscal year ending June 30, 1901: Total number of vessels cleared 245, of 141,375 tons; exports of lumber to foreign ports 67,253,000 feet, sawn timber 33,595,000 feet and hewn timber 10,736,536 feet, or a total of 111,584,536 feet, valued at \$1,475,000; domestic exports of lumber manufactured at and cleared 20,000,000 feet, shipped coastwise 12,000,000 feet and shipped by rail 18,000,000 feet, a total of 50,000,000 feet, or grand total of 161,584,536 feet, valued at \$2,015,000.

It is expected that 300 delegates of trade organizations will attend in October the congress intended to devise means for securing from the next Congress adequate river and harbor appropriations.

During the week ended August 10 the sales in Joplin (Mo.) district were 8,032,930 pounds of zinc ore and 1,506,140 pounds of lead ore, valued in all at \$127,222.

Mr. H. P. Cook of Flint, Mich., who has interests in Mobile, has suggested that a steel furnace should be built in that city.

The first new bale of Louisiana cotton arrived this year at New Orleans from Alexandria on August 10.

Preliminary organization has been effected by the Wholesale Merchants' Association of Savannah.

MECHANICAL.

Foos Manufacturing Co.'s Exhibit.

Visitors to the mechanical exhibits at the Pan-American Exposition, Buffalo, N. Y., find a varying line of machinery on view. American builders of machinery

on cylinder it moves arms on shaft out of the locked position and proceeds to roll the log on to the carriage, and instantly returns to its proper position, blocking the next log. These machines are made in several sizes to handle different sizes of logs, and can be put into any mill. For further particulars address the

means for correcting this condition. Mills which are heated and ventilated by the Buffalo Fan System, as designed and constructed by the Buffalo Forge Co., Buffalo, N. Y., are free from this defect, as the proper atmospheric conditions are attained.

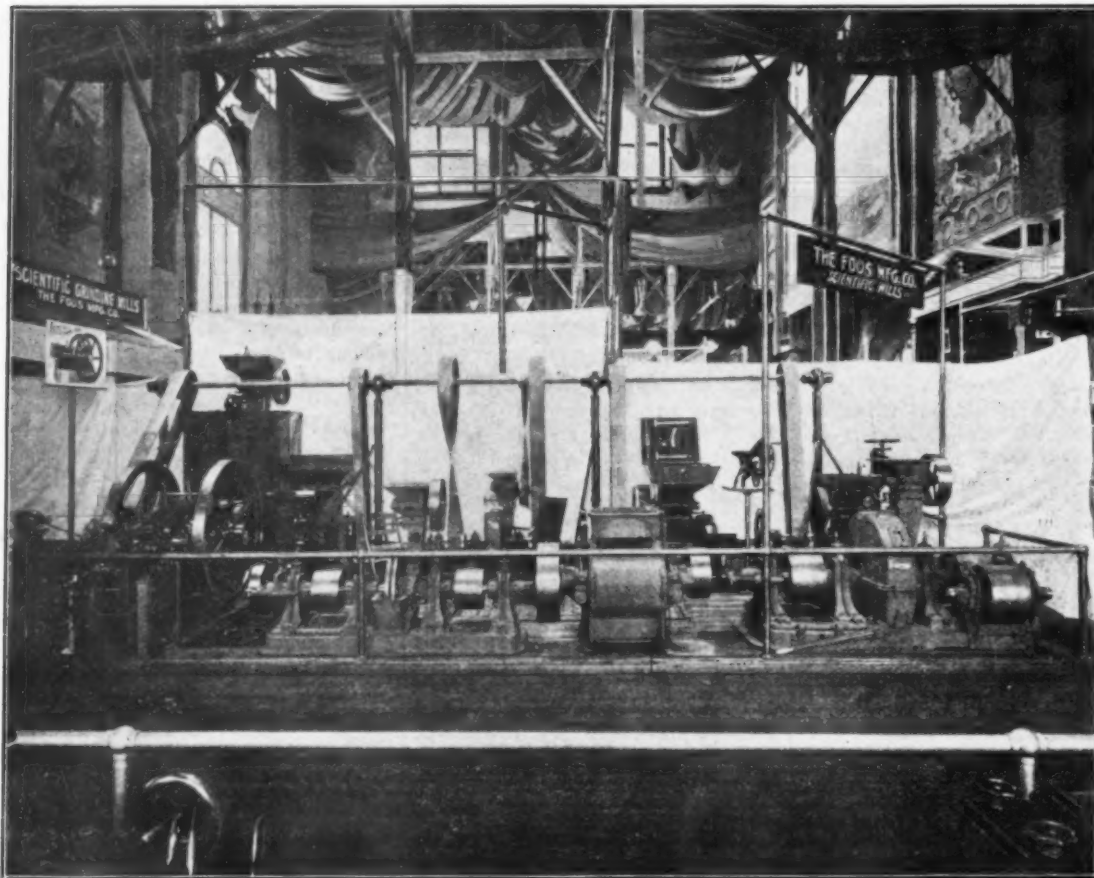
The Buffalo Fan System as applied for

overhead piping, is to have the fan discharge into a brick duct leading along one side of the mill below the floor level, and from which vertical risers or flues built into the wall take their supply for the floors above. The fan will be constructed of a sufficient capacity to enable it to change the air in the mill completely once in about every twenty minutes, or, in other words, the number of cubic feet of air delivered by the fan in a minute will be approximately equal to about one-twentieth part of the air volume of the mill.

The fan maintains a positive or forced circulation of air at all times. By regulating the number of coils of the heater through which steam is passed, or by regulating the temperature of the steam itself by means of reducing valves and the like, the temperature of the air which is delivered to the mill can be brought to any point which is deemed necessary. Such a fan system allows of absolute control over the temperature which is obtained. A still further refinement admits of automatic control over the temperature, accomplished substantially by means of thermostats controlling either the steam supply of the heater, or else regulating dampers, which vary the amount of cold air admitted to the main air duct without passing through the heater coils. This by-pass damper is usually located beneath the heater, so that a portion or all of the air may be made to pass over the steam coils at pleasure. The automatic regulation of this damper will bring about an automatic regulation of the temperature. The thermostat is placed in one of the operating rooms, and may be regulated within certain limits to maintain the temperature at any point, though this, of course, must be higher than that of the outside air.

Air possesses the power of holding in suspension a certain amount of water vapor, the exact amount depending upon the temperature. If air has no moisture in it its relative humidity is zero, whereas if it has all it can hold at that particular temperature it is said to be saturated or to have a relative humidity of 100 per cent. A cubic foot of air at 32° F. is able to hold in suspension about two grains of moisture. At a temperature of 92° the maximum weight of vapor which it can hold is about fifteen and three-quarters grains before saturation. If at this latter temperature it contains but seven and seven-eighths grains, its relative humidity is said to be 50 per cent. In a building whose interior volume is 100,000 cubic feet, assuming it to be heated to a temperature of 82° F. and 65 per cent. relative humidity at a time when the outdoor atmosphere is at a temperature of 52° F. and a relative humidity also of 65 per cent., one cubic foot of air at 52° F. when saturated will hold about 4.4 grains, and hence for a humidity of 65 per cent. must have about 2.9 grains of water vapor to the cubic foot. Air at 82° F. will hold 11.7 grains before becoming saturated, and hence will need 7.6 for a humidity of 65 per cent. Therefore, to every cubic foot of air forced into the building must be added 4.7 grains of water vapor. Assuming an air change of three times per hour, the fan must handle 5000 cubic feet of air per minute. Neglecting the slight changes in volume due to heating, about 3.5 pounds of water must be absorbed every minute in order to maintain a relative humidity of 65 per cent. in the ingoing air. The water which is thus supplied will therefore make up for any deficiencies which might otherwise be caused by the dryness of the stock being handled.

The problem of air moisture in fan-sys-



FOOS MANUFACTURING CO.'S EXHIBIT AT PAN-AMERICAN EXPOSITION.

for all purposes have attained a position in advance of those of other countries. One of the most interesting exhibits at Buffalo is shown in the accompanying reproduction of a photograph taken of the Foos Manufacturing Co.'s booth. This company is one of the leaders in machinery design and construction. It has extensive works at Springfield, Ohio, where it builds Scientific Attrition Mills for oil-cake. Its efforts in this branch of industry have met with great success, the result of nearly twenty years' practical working and careful study of the chosen field. The mills are built especially for their work, of the best obtainable materials, by the highest skilled workmen, and after the latest designs and methods that have been found to produce machines giving satisfaction to the most exacting users.

Hill Patent Steam Log Stop and Loader

With the exception of the steam nigger, the device illustrated in the accompanying cut is one of the greatest labor-saving devices ever put in a saw-mill. It is, as its name indicates, a machine for keeping the logs, as they roll out of the trough on to the deck, from running down on the carriage until wanted.

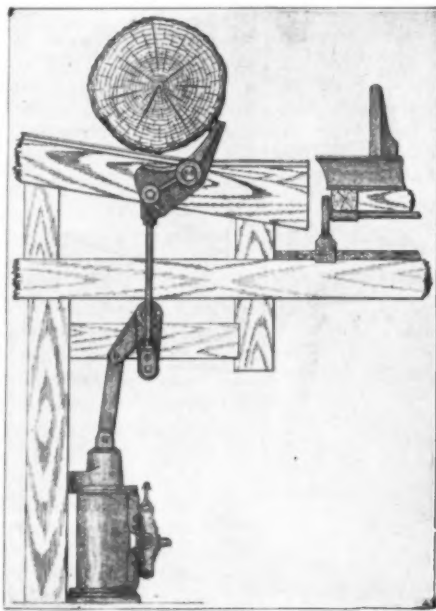
This machine has several important features. Instead of using a shaft in the deck, two short journals are used, thus allowing the nigger-bar a full sweep. The main shaft is located out of the way below the floor, and two connecting rods are used from the arms to the shaft. These connecting arms connect to two arms on the shaft in such a manner as to form a perfect lock when the machine is at rest. No log, no matter how large, can crowd the loader arms down, as is the case when they are held in place by steam pressure. As soon as steam is put

manufacturers, Wm. E. Hill & Co., Kalamazoo, Mich. When writing please mention the Manufacturers' Record.

The Control Over Temperature and Humidity in Textile Mills.

In view of the great effect which varying degrees of humidity have upon the

heating, ventilating and humidifying textile mills consists essentially of a steel-plate fan, heater and various air ducts or pipes. The fan may be of various types, and may be driven by belting or direct-connecting to a fan engine or motor. The heater, which consists of a number of coils of steam pipe grouped together, is



HILL PATENT STEAM LOG STOP AND LOADER.

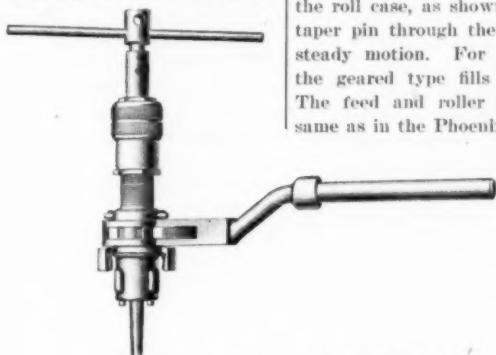
products of textile mills of all descriptions, the problem of adequate control for the relative amount of moisture in the air of the operating rooms becomes one of great seriousness. The influence of excessive dryness manifests itself in various different ways, all of them objectionable, and hence the demand for artificial

situations near the fan and arranged so that the air delivered by the fan passes through and over the various pipes of the heater, whence it is delivered to the various air ducts ramifying from the fan and delivering the air at such points as may be desired. A common construction for textile mills, in order to eliminate all

tem installations is a very simple one, and requires simply that the necessary conditions be maintained by introducing the proper amount of moisture into the air which is being forced into the mill. This may be accomplished in a variety of ways, such, for instance, as a jet or spray of water placed in the main air duct near the fan, or by a steam pipe discharging steam into the duct at the same place. If automatic regulation of humidity is required, this can be controlled, as was the temperature, by means of an instrument placed in the operating room and controlling the amount of steam or vapor which is discharged into the air current. The controlling principle of such an instrument would be that of an ordinary hygrometer. If a shallow tray of water is placed in the main air duct, with a perforated steam pipe below the level of the water, a controlling instrument in the mill above may be made to regulate the amount of steam discharged from this pipe, so that the humidity can be kept at very nearly a constant percentage.

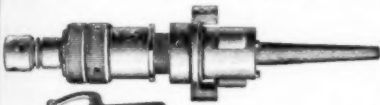
Improved Tube Expanders.

The accompanying illustrations give an idea of the tube expanders manufactured



ATLAS EXPANDER-RATCHET TYPE.

by the Watson-Stillman Company, 204-210 East Forty-third street, New York. The manufacturer claims, with good reason,



ATLAS EXPANDER-PLAIN TYPE.

that it has perfected a device which overcomes many of the difficulties hitherto found in mechanism of this kind. In



PHOENIX EXPANDER-RATCHET TYPE

the ratchet type of expander the entire roll case is revolved with the ratchet lever. This increases the speed of the expander



PHOENIX EXPANDER-GEARED TYPE.

about three times, consequently reducing the time required for the operation. The taper pin is fed with the screw-feed nut

shown at the top of the case, thus avoiding all hammering upon the pin, and prolonging the life of the tool to a great degree. The rollers are made with the proper taper to bring the surface of the roll parallel with the interior surface of the tube. This insures a good joint throughout the thickness of the head, and expands the tube against the head equally as tight in the rear as in the front of the head sheet. At the bottom of the feed nut a thin hexagon nut is shown, which acts as a depth gauge. This is advantageous where a number of tubes are to be expanded, for with this gauge nut the operator can feed the taper pin to the same depth for each tube, thus obtaining uniformity.

For large-sized tubes, the plain expander operates at a slower speed. It is similar to the ratchet type with the exception of the ratchet lever being attached to the case. For special conditions and limited space the Phoenix expanders have been designed. They are of the ratchet and geared types. The former in power and speed is very similar to the Atlas expander, but its feed mechanism is changed from a feed nut to a threaded taper pin. The revolution of the roll case, as shown in cut, feeds the taper pin through the case with a slow steady motion. For very small spaces the geared type fills the requirements. The feed and roller mechanism is the same as in the Phoenix ratchet type, but

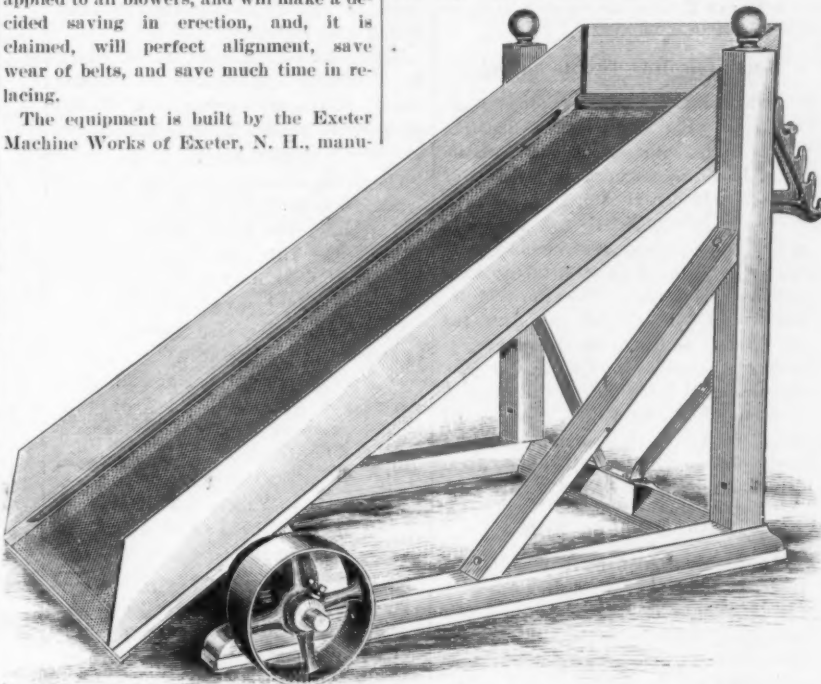
tightened. A telescopic mouthpiece allows this movement without disarranging the blast pipes. This form of construction will be appreciated, as there is nothing more troublesome connected with foundry machinery than the slipping of the blower belts at the critical time when the iron is melting, and it is impossible to shut down and take up the belts without great loss.

This same form of construction can be applied to all blowers, and will make a decided saving in erection, and, it is claimed, will perfect alignment, save wear of belts, and save much time in relacing.

The equipment is built by the Exeter Machine Works of Exeter, N. H., manu-

facturing of blowers and ventilating wheels.

Each screen frame is made double of hardwood, and provided with transverse iron strain rods, placed across immediately under the wire cloth. The wire cloth is fastened in the usual manner by staples between the double wood frame, and secured further by bolts at the sides and top. By means of the iron strain



THE JARECKI SCREENING MACHINE.

factor of blowers and ventilating wheels.

The Jarecki Screening Machine.

An illustration is presented herewith of an equipment for screening and grading fertilizers, acid phosphate, chemicals and other materials.

The Jarecki Screening Machine consists of a steel casing containing one or more removable screen frames, mounted between standards on a strong well-braced wooden frame. Motion is given by two cam wheels, one on each

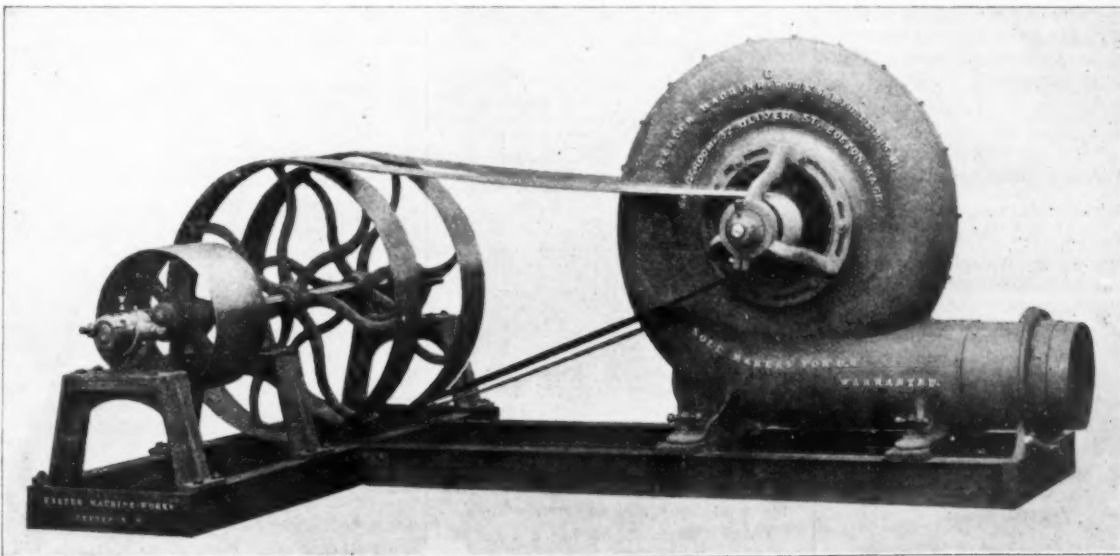
rods and the movable top rail the wire cloth is stretched tight on the frame, and any subsequent sag can be taken up. Single, double or triple screen frames, with wire cloth of any desired mesh, can be placed in position, removed or exchanged in a few minutes.

The lifting cams are made with a throw of one-eighth to one and one-half inches, according to size of machine and nature of materials to be screened.

This machine is built in eight sizes, with screen surfaces ranging from four and one-half to 150 square feet, and with

Exeter Pressure Blower.

Foundrymen will be interested in the accompanying illustration. It shows one form of construction for a self-contained pressure blower and countershaft, designed and constructed especially for



EXETER PRESSURE BLOWER ON ADJUSTABLE BED AND COUNTERSHAFT.

high-pressure duty, such as supplying blast for cupolas, furnaces, forge fires, sand-blast machines, and for any work requiring forcing of air long distances.

The blower and countershaft are on a frame constructed of steel beams, and by use of the ratchet wrench the blower can be moved and bolts tightened while in use. The main driving belt can also be

side, keyed on a shaft with pulley at one end.

The steel casing at its upper end has a trunnion shaft on each side resting in an iron rack, by which it can be raised or lowered for proper adjustment of the inclination. Its lower end is provided with two striker plates riding on two flanged cam wheels. The latter produce a

single, double or triple interchangeable screens. It may be enclosed completely, dustproof, and provided with one or more inlet and delivery spouts, according to number of screens used and grades of materials required.

For further information address the builders, Messrs. C. H. Dempwolf & Co., York, Pa.

TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

North Carolina Textile School.

The coming fall will mark one more step in the progress of textile education in the United States. The new textile school in North Carolina at Raleigh, of which Mr. Henry M. Wilson is director, will soon be completed and its doors opened for the reception of the many students who are clamoring for this form of industrial education. The work of instruction will be carried out along the usual lines, with the aim, however, of meeting the needs of North Carolina. There remains a vacancy in the corps of instructors in the school. A designer and fancy weaver is wanted, one who can handle dobby, loom and jacquard work. This position will pay \$1200.

Rushton Cotton Mills.

The stockholders of the Rushton Cotton Mills of Griffin, Ga., met during the week and ratified the recent decision to double their 5000-spindle plant, which was announced in this department. The common stock will be increased from \$100,000 to \$125,000, and the preferred stock by \$75,000. The company declared a dividend of 4 per cent, and carried an amount to surplus. Arrangements will be made at once for commencing work on the \$65,000 addition. The company expects to have the improvements completed by November.

A \$6000 Knitting Plant.

The Waco Knitting Mill has been organized at Waco, N. C., and is establishing plant of twenty-five machines with a daily capacity of 150 dozen pairs of half-hose. A one-story and basement building 34x60 feet is being erected, and about thirty-five hands will be employed. The investment will be \$6000, which is to be increased to \$10,000 within a year. The plant will be operating in sixty days. W. A. Goode is president; M. C. Beam, vice-president, and M. E. Goode, secretary-treasurer.

Another 6000 Spindles

Announcement has been made at Aunston, Ala., that the Woodstock Cotton Mills will double its equipment. This company just completed its plant several months ago, and has found its prospects such as to warrant the doubling decided upon. The ring spindles number 6250, and these will be duplicated, some of the machinery having already been ordered. The additional equipment is expected to be in place within sixty days. Probably about \$60,000 will be expended.

Textile Notes.

Virginia Woolen Co. of Winchester is reported as to double its plant.

It is stated that Marion Butler will erect a cotton factory near Elliott, N. C., Western parties to be interested.

Robert Balbi, Malta, wants to communicate with American manufacturers of cotton and woolen piece goods, hosiery, etc.

L. B. Whatley, 118 High street, Portsmouth, Va., is asking for prices and information on machinery for making cotton batting.

The plant of the Petersburg (Va.) Hosiery Co. was greatly damaged by fire during the week. The proprietors were engaged in making enlargements and improvements that were to cost \$10,000.

The Littleton (N. C.) Hosiery Mills is reported as contemplating enlargements to its plant because of the increasing demand for its product.

The Camilla (Ga.) Supply Co., incorporated by T. R. Bennett and others, proposes to operate cotton-spinning mills among other industries.

Messrs. G. D. Flanagan, R. M. Dulin, R. T. Smith and others of Bowling Green, S. C., are organizing a \$12,000 company to build a knitting mill; \$7000 has been subscribed.

The Orient Manufacturing Co. has been organized, with H. D. Wheat as president, and acquires the Alpha Mills at Charlotte, N. C. This plant was reported at length last week as remodeling and improving at a total cost of \$250,000.

L. A. Vaughn, reported last week as to establish knitting mill at Winston-Salem, N. C., has secured building at 622 Cherry street, and will install knitting equipment as soon as received. The machinery has been ordered. Union suits and ribbed underwear will be the product.

Messrs. John W. Rice and S. B. Love of Nickajack, Ga., have incorporated the Concord Manufacturing Co., with capital paid in of \$25,000, to manufacture cotton and woolen goods, trousers, etc. This company will continue the Concord Woolen Mill, which the incorporators have conducted for some years.

Messrs. T. C. Thompson & Bros. of Birmingham, Ala., general contractors and builders, have finally completed the Olympia Cotton Mills at Columbia, S. C. This extensive and modern plant has been frequently referred to in this department. It has 104,000 spindles under one roof, and is electrically equipped throughout. It is capitalized at \$1,750,000.

QUOTATIONS OF COTTON YARNS.

By Buckingham & Paulson, New York, Philadelphia and Chicago, August 13.

No. 10s-1 and 12s-1 warps.....	13 @
No. 14s-1 warps.....	13 1/2 @
No. 16s-1 warps.....	13 3/4 @
No. 20s-1 warps.....	14 @
No. 22s-1 warps.....	14 1/4 @
No. 28s-1 warps.....	15 @
No. 6s to 10s bunch yarn.....	12 1/2 @
No. 12s-1.....	14 @
No. 14s-1.....	13 3/4 @
No. 16s-1.....	14 @
No. 20s-1.....	14 1/2 @
No. 22s-1.....	14 3/4 @
No. 28s-1.....	15 1/4 @
No. 8s-2 ply soft yarn.....	13 @
No. 10s-2 ply soft yarn.....	13 1/2 @
No. 8s-2 ply hard.....	13 @
No. 10s-2 ply hard.....	13 1/2 @
No. 12s-2 ply hard.....	13 3/4 @
No. 14s-2 ply.....	13 3/4 @
No. 16s-2 ply.....	14 @
No. 20s-2 ply.....	14 1/2 @
No. 24s-2 ply.....	15 1/4 @
No. 28s-2 ply.....	15 3/4 @
No. 30s-2 ply yarn.....	16 1/4 @
No. 40s-2 ply.....	22 1/2 @
No. 8s-3, 4 and 5 ply.....	13 @
No. 20s-2 ply chain warps.....	15 @
No. 24s-2 ply chain warps.....	16 @
No. 28s-2 ply chain warps.....	16 1/2 @
No. 30s-2 ply chain warps.....	17 @
No. 16s-3 ply hard twist.....	14 @
No. 20s-3 ply hard twist.....	15 @
No. 28s-3 ply hard twist.....	15 1/2 @

Prices nominal.

Cottonseed-Oil Notes.

It is stated that twenty-eight new cottonseed-oil mills will commence business in Texas this year, having a combined daily capacity of 1090 tons.

The shipments of cottonseed oil from the port of New Orleans for the month of July, 1901, amounted to 412,658 gallons, valued at \$146,031, against 221,032 gallons, valued at \$61,965 last year.

The Bryan Cotton Oil Co. of Bryan, Texas, was organized on the 7th inst., with a capital stock of \$60,000. The following officers were elected: J. W. English, president; J. W. Singleton, vice-president; A. D. McConico, treasurer, and

R. H. Patterson, secretary and manager.

Texas cottonseed products are now only fairly steady. Prime crude oil, loose, and prime summer yellow oil are both nominal, while linters are quoted at 1 1/4 to 2 1/4 cents per pound, all f. o. b. mill at Texas interior points; cottonseed meal and cottonseed cake are \$21 to \$21.50 per ton, and baled hulls \$5, all f. o. b. Galveston.

The stockholders of the North Mississippi Oil Mill at Holly Springs, Miss., met on the 6th inst. and elected a board of directors for the ensuing year. The directors elected George M. Buchanan, president, and Addison Craft, secretary. Last season was a profitable one for this mill, and operations this season will be commenced early.

Norfolk is to have a \$60,000 plant erected on the south branch of the Elizabeth river by the McNally Oil Manufacturing Co. for the purpose of manufacturing castor and other vegetable oils. The plans for the main building and warehouses have been completed, and are now in the hands of the contractor, who will submit bids at once.

The La Grange Oil Mill at La Grange, Texas, was sold to the La Grange Cotton & Oil Manufacturing Co. The above company has been incorporated for the purpose of manufacturing cottonseed oil and by-products of cottonseed. The oil mill has been rebuilt, and is now a modern up-to-date plant. C. J. V. Rosenberg has been elected manager for the new company.

Secretary Nat Graves of the Memphis Merchants' Exchange has published the following rules for the guidance of planters adopted by the International Cottonseed Crushers' Association: A ton of cottonseed to be 2000 pounds; a carload of cottonseed to be fifteen tons. Cottonseed shall be divided into two classes, prime seed and off seed. Prime seed shall be clean, dry, sound seed, free from dirt, trash and bolls. All seed not coming up to the requirements of prime seed shall be considered off seed.

The following are official quotations on cottonseed and cottonseed products as posted at the New Orleans Cotton Exchange on the 12th inst.: Prime refined oil in barrels, 36 to 37 cents per gallon; off refined oil in barrels, 35 cents per gallon; prime crude oil, loose, nominal per gallon; prime cottonseed cake, \$24 per ton of 2240 pounds; off do., nominal; prime cottonseed meal, \$23.75 per ton of 2240 pounds; off do., nominal; soap stock, loose, 1 cent per pound; linters, per pound, choice, nominal; A, nominal, B, nominal; C, nominal; cottonseed in sacks delivered in New Orleans, \$10 per ton of 2000 pounds; in bulk delivered in New Orleans, nominal per ton of 2000 pounds.

The exports of cottonseed cake and meal from the port of Galveston, Texas, for the fiscal year ending August 31, 1900, as furnished by the Transatlantic Trading Co. were as follows: Meal 163,767 tons and cake 30,459 tons, or a total of 194,226 tons; the exports for eleven months ending July 31, 1901, were 218,316 tons of meal and 33,767 tons of cake, or a total of 252,083 tons. The same company reports the following exports of cottonseed cake and meal from New Orleans: For the season of 1899-1900—meal 77,277 tons and cake 114,407 tons, or 191,684 tons, and for the eleven months ending July 31 exports amounted to 74,931 tons of cottonseed meal and 123,798 tons of cake, making a total of 198,729 tons.

The Huntsville (Ala.) Electric Railway, Light & Power Co. will, it is announced, improve the electric-light service of the city.

PHOSPHATES.

Phosphate Markets.

Office Manufacturers' Record, Baltimore, Md., August 14.

The local phosphate market has ruled quiet and steady during the past week, with the volume of business moderate. Manufacturers are not in the market to any great extent, merely purchasing for present wants. The charters reported for the week are as follows: British steamer Adra, 1804 tons, from Coosaw to King's Lynn with phosphate at 14/8, August; British steamer Fernlands, 1294 tons, from Tampa to Boness with phosphate at 16/8, August, and British steamer Elswick Tower, 2578 tons, from Hamburg to two Atlantic ports with kainit on private terms. Advices from Southern phosphate fields continue to show considerable activity in certain sections, and as a rule miners are generally working their plants at their full capacity. The South Carolina field is now showing up better than for some time past, and there is some foreign demand, as well as a fair distribution at home. Prices are very low, and there is no disposition on the part of miners to make further concessions. In Florida the output is being increased, and at the ports there is some accumulation, on account of the non-arrival of vessels. There is very little doing in the way of prompt or near future business, and the bulk of sales of rock are for early in 1902. Miners and manufacturers are generally apart in their views as to prices, the former being firm holders. In the Mt. Pleasant district the market is generally very strong under late reports of organization, and prices for both home and export rock show a hardening tendency. Shipments of Tennessee rock from Pensacola continue quite liberal. The market at Mt. Pleasant closed with prices about as follows: 72 per cent, \$2.25 to \$2.50, 75 per cent, \$2.75 to \$3 and 78 per cent, \$3.25 to \$3.50.

Fertilizer Ingredients.

Business in leading ammoniates during the past week has been quiet, while prices continue to show a fairly steady tone. The offerings are moderate. There has been more inquiry from Eastern sources, while from the South the demand is not pressing. Nitrate of soda is firm for all positions, and sulphate of ammonia slightly improved.

The following table represents the prices current at this date:

Sulphate of ammonia (gas).....	\$2 70 @ 2 72 1/2
Nitrate of soda, spot Balto.....	1 85 @ 1 90
Blood.....	2 27 1/2 @ 2 30
Azotine (beef).....	2 35 @
Azotine (pork).....	2 35 @
Tankage (concentrated).....	2 20 @ 2 22 1/2
Tankage (9 and 20).....	2 30 & 10 2 35 & 10
Tankage (7 and 30).....	20 00 @ 21 00
Fish (dry).....	27 50 @ 30 00

Phosphate and Fertilizer Notes.

The International and Howard phosphate companies at Mt. Pleasant, Tenn., are now engaged in filling an order for 7000 tons of phosphate rock. An especially high grade of rock will characterize the order.

The consumption of fertilizers in Georgia for the season about closing is said to amount to about 500,000 tons, against 412,755.50 tons in 1899-1900. The present season surpasses the largest season ever known before by about 75,000 tons. The revenue from the sale of tags this year has been about \$50,000.

Messrs. Elmore, Landrum & Lamar, who have leased from Dr. E. E. Murphy a property near Hephzibah, Ga., on which there are valuable kaolin deposits, are now busily engaged developing the same. The company expects to build a mile and one-half of railroad track to the works from the Augusta Southern Railroad,

and has already erected warehouses and a drying shed. The Richmond county kaolin is said to be of superior quality, large shipments being made to Baltimore and Eastern cities.

It is stated that Mr. R. H. Wright, the Tennessee representative of the Virginia-Carolina Chemical Co., passed through Columbia, Tenn., on the 7th inst. with a crew of men en route to Mt. Pleasant, Tenn., to prepare for a thorough investigation of the phosphate field. A party of engineers are expected to assist in carrying on the work.

Col. Samuel W. Vance, phosphate inspector for the State of South Carolina, died at Columbia, S. C., last week. Colonel Vance was elected State phosphate inspector in 1899, and was only about a month ago elected for a term of two years. At the time of his death he was also assistant secretary of the State Agricultural and Mechanical Society.

Of the reported consolidation of the phosphate companies of Tennessee the Mt. Pleasant Chronicle of the 9th inst. says: "Negotiations for the consolidation of the principal phosphate-rock properties in Tennessee have been closed, the purchase of most of the properties being based on the tonnage. A corps of engineers will be organized immediately and begin the estimation of the capacity by tons of the various properties. The terms being cash, millions of dollars will be paid out in Maury and adjoining counties within the next few weeks. George H. Rogers of the export firm of Rogers, Holloway & Co., Philadelphia, has been mainly instrumental in effecting this consolidation, embracing the Howard, International, Blue Grass, American, Jackson, Harlan and the French companies and others at Mt. Pleasant and in Lewis, Hickman and Sumner counties."

The July number of the Sewanee Review, that sterling quarterly representative of Southern culture, shows the effects of the sustained purpose on the part of its editors, Drs. John B. Henneman and B. J. Ramage, to widen its usefulness as an agent for the advancement of the South's higher life. Its contributions include "Roscommon: His Life and Works," by Frazer Hood; "The Poetry of the Old Testament," by George Downing Sparks; "The Old English Ballad," by Edwin W. Bowen; "The Founder of the American Navy," by Charles W. Turner; "Lee, Virginia and the Union," by Fred Henry Cox; "Some Present Educational Problems," by E. H. Babbitt, B. J. Ramage and J. B. Henneman; "Two Poets," by William Norman Guthrie and G. B. Rose; "Barabbas and Shylock: A Character Study," by Israel Davidson, and "The 'Medea' of Euripides and the 'Medea' of Grillparzer," by Chiles Clifton Ferrell. The departments of the quarterly devoted to reviews and notes are unusually interesting.

TRADE NOTES.

New Maker of Valves and Hydrants.—The Dimmick Pipe Co. of Birmingham, Ala., has recently entered the market as manufacturer of valves and hydrants of very superior design, and is meeting with deserved success in all sections of the country.

Ventilating Machinery.—The Exeter Machine Works, Exeter, N. H., is receiving good orders for blowers and ventilating wheels. The company recently shipped a 110-inch steam fan to the Hazleton (Pa.) Electric Light & Power Co.

Special Features.—A special feature of the extensive manufacturing plant of the Wellman & Seaver Engineering Co., now erecting at Cleveland, Ohio, will be a complete installation of the Sturtevant system of mechanical ventilation and heating, regarding which the builder has been instructed that the best possible equipment shall be provided for the comfort of the employees. The

B. F. Sturtevant Company of Boston will install this plant.

Ball Engines for Export.—Ball engines are shipped to all parts of the world. Their builder, Ball Engine Co. of Erie, Pa., has recently made shipments to China and Japan. The Consolidated Mines at Duluth, Minn., have just started up their 110-horse-power engine for electric lighting. It is a Ball engine.

Ball Engines Again.—The automatic cut-off engines made by the Ball Engine Co. at Erie, Pa., have earned a reputation that is enviable in the power world. Orders for this build of engine constantly reach the company. Two recent orders were a 300-horse-power engine for a Roanoke (Va.) railway and a 70-horse-power engine for electric service at Richmond, Va.

Shultz Belting Co.—This leading manufacturer, one of the most prominent in its chosen specialty, finds the demand so urgent that enlargements of the factory are required. Accordingly, new buildings are being erected and new machinery is being installed to double capacity. The plant is at St. Louis, Mo., with branches in Boston, New York, Philadelphia and other leading cities.

Furnishing Domestic and Portland Cements.—The Southeastern Lime & Cement Co. of Charleston, S. C., has contracted with Messrs. W. J. Oliver & Co., railroad contractors, to furnish them all their needs in Portland and domestic cement for the work on the Salisbury branch of the Southern Railway. This contract requires about 8000 bushels of Lehigh Cement, Portland, and several thousand barrels of natural cement.

Fifth Wheels.—Fifth wheels constitute one of the most important parts of wagons, buggies, carriages and other styles of vehicles. The D. Wilcox Manufacturing Co. of Mechanicsburg, Pa., has long been prominent in fifth-wheel manufacture, and its product, in full and plain circles, is largely used by vehicle-works operators. The Wilcox Company finds it necessary to enlarge because of the demand for its fifth wheels, and is erecting a brick and iron building 40x140 feet.

A Handsome Home.—One of the handsome homes in the beautiful Southern city of Macon, Ga., is that just being completed for Mr. W. P. Stevens. The dwelling is in the old colonial style, built of Philadelphia face brick, with porticos, steps and approaches of Georgia marble in special design. The interior will be tastefully and expensively finished, lighted by electricity and gas, and have every modern convenience. Mr. Stevens is one of the well-known H. Stevens' Sons Co., manufacturer of drain pipe, tiling, etc., at Macon.

All Kinds of Machinery.—Machinery-buyers throughout the South should not fail to ascertain competitive estimates when they are about to place contracts. Whether the machinery they want is to be new or second-hand, it is always advisable to ask for prices from makers and dealers. Prominent among Southern firms in machinery brokerage is that of Robert Armstrong & Bro. at Foundry street and W. & A. Railway, Atlanta, Ga. They carry on hand constantly a large stock of new and second-hand machinery and deal extensively in scrap metals.

Armitage Manufacturing Co.—This leading concern is located at Richmond, Va. It has many large contracts on file now for gravel and slag roofing, and its paint and varnish business is flourishing. The demand has, in fact, become so urgent that the factory's capacity is being increased 100 per cent. Another important step taken by the Armitage Manufacturing Co. is the formation of the Alcatraz Asphalt Paint Co. and the purchase from Barrett Manufacturing Co. of Philadelphia of all rights in the Alcatraz Asphalt Paint for structural steel and iron work.

Bridgers & McKeithan Praise It.—Writing in regard to a dust-collecting system installed in its lumber mills, the Bridgers & McKeithan Lumber Co. of Lumber, S. C., states: "Your system of exhaust and blow pipes in our planing mill is working to our entire satisfaction, and we gladly recommend same to anyone requiring an apparatus of this kind." The Sterling Blower & Pipe Manufacturing Co. is the company addressed in the terms quoted. The Sterling people think of establishing an office in the South because of the rapid increase of the demand for their product there.

High-Grade Fire-Brick.—Product of high grade usually finds a ready market, and in these busy times manufacturers of that class find their works needing enlargement from time to time. Fire-brick is an article that readily sells when it is high grade and per-

fectly adapted to the purposes for which it is used. The Carolina Fire-Brick Works of Killian, S. C., manufactures high-grade fire-brick. Its plant has many and large orders on file now, and it was recently enlarged 25 per cent. Buyers of the brick named, also of fire-clay, glass-sand, etc., are advised to obtain quotations from this representative concern.

Vilter Manufacturing Co. Contracts.—The Vilter Manufacturing Co. of Milwaukee, Wis., has recently closed a number of important and large contracts for its make of ice and refrigerating machines. The contracts came from leading industrial establishments in Wisconsin, Kansas, Nebraska, District Columbia, Louisiana and Illinois. The refrigerating machines were as large as 125 tons capacity and the ice machines as large as fifty tons capacity. Other contracts received were for Corliss engines to be shipped to grain and railway companies, paper mills, rice mills and other industries in different Southern and Western States.

Using Powhatan Bricks.—Some prominent buildings now being erected in the South are using the face bricks manufactured by the Powhatan Clay Manufacturing Co. of Richmond, Va. Among them may be noted the Charlotte Williams Hospital at Richmond, Union Passenger Station at Savannah, Ga.; Union Passenger Station at Columbia, S. C., and Jefferson Hotel, Grove Avenue Baptist Church, Broadus Memorial Church and Mechanics Institute, all at Richmond. The Powhatan bricks are made in cream white, silver gray and salt and pepper, in Norman, Roman and standard sizes. Builders and contractors are invited to send for samples and prices.

Victor Turbines Ordered.—Water-power users continue to manifest their confidence in the merits of the Victor Turbine Wheels by ordering them from the manufacturers. The Wisconsin Traction, Light, Heat & Power Co. of Appleton has given an extensive order for Victor turbines. This order comprises two units, each unit consisting of three pairs of 42-inch turbines mounted on horizontal shafts, to develop 3200 horse-power and be used for driving main plant. Two 24-inch horizontal Victor wheels will be furnished for driving the exciters. The gateway will be the patent draw-rod type of the Victor builders. The two exciter-wheels will develop 150 horse-power. The Stillwell-Bierce & Smith-Valley Company of Dayton, Ohio, manufactures the Victor Turbine Wheels and complementary equipment.

Making Bedstead Tubing.—The introduction of metal bedsteads has resulted in a large and growing demand for those articles. The manufacture of the tubing for bedsteads has been made a specialty by the Mackie Steel Tube Manufacturing Co. of Hammond, Ind. This company has a most modern and complete plant for producing high-grade steel tubing, and its product is of such a satisfactory character that the demand from bedstead makers is on a rapid increase. Prompt shipments and the lowest possible prices consistent with perfect goods are offered buyers. Other Mackie productions in tubing, bevel-jointed and brazed, are suitable for bicycle and umbrella trades and others; also casters are made by the company. Extensive improvements now being made at the Hammond works will largely increase the facilities.

New Corundum Plant.—Many classes of manufacture require abrasives in their operations. To supply these abrasives is the specialty of many prominent firms and companies. Prominent among such companies is the Scranton (Pa.) Corundum & Emery Wheel Co., manufacturer of pure sapphire corundum and emery wheels. The demand for the Scranton Company's product increased so during the past year that the erection of a new and larger factory was necessary. The completion of this factory is now announced and the company is prepared to furnish its product promptly in small or large quantities. The Scranton Corundum & Emery Wheel Co. is desirous of hearing from manufacturers who have been unable to find a wheel to suit them or from those who have used wheels which resulted in injuries or fatalities. It is claimed that no "Scranton Wheel" ever killed a man.

Proper Paints for Preservative Use.—The use of preservative paints is rapidly becoming general. Often many years elapse before iron or steel framework show signs of deterioration from rust, oxidation or age, but once the process of decay sets in, unless it is promptly arrested it spreads rapidly and soon undermines the strength of the metal, so that it must be entirely renewed. A case in point is that of some steel cars bought eight years ago for gravel service in contract

work. The cars passed to a railroad company later on and were used in coal, gravel and cinder service. Two years ago the cars looked well, showing but few signs of the rapid deterioration which has subsequently developed. A recent examination shows that they had so decayed as almost to necessitate entire rebuilding. For instance, the I beams had rusted away on each side, so that there were holes clear through the upright part, while the top of a hammer on the bottom or sides of the cars would put more holes in them. Iron framing, if exposed to the drip from coal and cinders, will look all right for a few years, but when the process of oxidation once gets in the scale left by the rolling process removed in a few months, it will eat away the strength of the beams. The Standard Paint Co. of New York city has for years been manufacturing the well-known P & B Preservative Paints, which are offered as the best protective known for metal, wood, brick, stone, etc., being absolutely proof against rust, rot, decay or oxidation from water, acids, alkalis, gases, etc. P & B paint is not merely a surface coating; it "bites" deeply into the pores of the material and stays there, repelling all foreign substances that would otherwise prove injurious. It is tenacious and elastic; will not melt, crack or peel. The large railroads have for years not only used it on the iron framework of their cars, but on the wood floors of refrigerator, dairy and stock cars, etc., where it is peculiarly valuable for waterproofing purposes. One transportation concern applies the P & B Waterproof Paint to all the sills and framing timbers of its refrigerator cars, and writes the Standard Paint Co. that it chose it after exhaustive tests from among some twenty-five or thirty other brands, and that in these tests the results were very much in favor of the P & B product. It says that its aim is to apply it to all timbers of the cars that are in any way exposed to dampness. This confidence seems to be pretty general among users of P & B Paint, and it would surely be odd if the Standard Paint Co. were not overrun with orders for a preservative material which not only ensures decided economy in lasting results, but is itself economical in application.

TRADE LITERATURE.

Sewing-Machine Transmitter.—Paragon Fan & Motor Co., 572 First avenue, New York, has issued Bulletin No. 65. This latter refers in an illustrative and descriptive manner to the Paragon Sewing-Machine Transmitter.

"The Mechanic."—This is a journal of interest to woodworkers. Its August number contains much interesting information for the class of industrial workers addressed. Send for copy, addressing the H. B. Smith Machine Co., Smithville, N. J.

Catalogue of Worsted Mills.—Messrs. J. E. Conant & Co., Lowell, Mass., auctioneers, have issued a complete catalogue in reference to the plants of the Prospect and the Globe Worsted Mills at Lawrence, Mass. These complete properties, in modern working condition, are to be offered for sale by the auctioneering firm. The date for sale is August 22. Those contemplating investment in this direction are urged to write for the catalogue.

Wire Rope.—Wire rope manufactured of steel and iron is extensively used. Many different kinds of construction work and industrial plants pay tribute to the worth of wire rope by their use of it in their equipments. For transmission of power, for surface and underground haulage, for cable railways and divers other purposes the wire rope of the Hazard Manufacturing Co. of Wilkes-Barre, Pa., is well known. This manufacturer has issued an illustrated Pan-American catalogue of its products. Present and prospective wire-rope users are invited to send for copy.

Electrically-Driven Universal Grinders.—Grinding has become well known and appreciated among advanced machine manufacturers as a method of finishing work. By the use of universal grinders all classes of work can be finished that has heretofore been finished in a lathe. In order to be entirely successful, grinding machines must be properly designed and accurately constructed; they must be massive in proportion and capable of quick and convenient handling. The requisite features of the perfect grinding machine are found in the product of the Anderson Tool Co. of Anderson, Ind. This company manufactures the Lea Universal Grinder, electrically driven, patented. The grinder is an electrically-driven tool, so designed and built. Illustrated descriptions of the different Lea machines will be found in the new catalogue just issued by the Anderson company.

CONSTRUCTION DEPARTMENT.

THE MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery Wanted." In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

It often occurs that the organization of a new company in a town is not known by the postmaster, and hence letters addressed to the company are returned marked "not known." The Manufacturers' Record reports the first organization of all companies, and our readers, in seeking to get into communication with them, should be very careful in deciding how to address them, and it is often advisable to add the names of one or more incorporators as an aid to the postmaster in delivering mail.

ALABAMA.

Anniston—Cotton Mill.—Woodstock Cotton Mills will double its 6250-ring-spindle plant; some of the machinery has been ordered.

Bessemer—Fertilizer Factory.—Standard Fertilizer Manufacturing Co. has closed contract for twenty acres of land as site for the establishment of its plant recently mentioned as proposed; it was reported that \$250,000 is the contemplated investment. John C. Brain, general manager, has office at 302 Commercial Club Building, Birmingham.

Bessemer—Foundry, etc.—Central Foundry Co., 116 Nassau street, New York, is removing the equipment of its Gadsden (Ala.) plant and consolidating the same with equipment of its enlarged Bessemer plant.

Birmingham—Machine Shops.—Caldwell & Watson have let contract for new foundry and machine shop buildings to cost \$18,000, 75x156 feet each.

Ensley—Machine Shops.—Tennessee Coal, Iron & Railroad Co., reported recently to build large shops at Ensley, states that it has some plans for enlarging and possibly rebuilding its shops, but has not finally determined what course it shall pursue.

Gadsden—Marble Works.—R. L. Killian of Jasper, Tenn., will establish marble works in Gadsden.

Hartselle—Oil Wells.—J. C. Haas, F. M. Billings and others of Montgomery have organized the Mountain Valley Oil Co. to bore for oil at Hartselle.

Huntsville—Saw-mill.—West Huntsville Saw-mill Co. will rebuild at once its burned mill.

Huntsville—Electric-light Plant.—Huntsville Electric Railway, Light & Power Co. will improve its lighting plant and service, extending incandescent system throughout the residence section. A. L. Sweeney is president.

Huntsville—Saw-mill.—Alabama Lumber Co. will rebuild its saw-mill burned recently at Byrd Spring; loss \$1250.

Mobile—Wharf Sheds, etc.—Superintendent Charles Marshall of New Orleans division of Louisville & Nashville Railroad states that the high wharf at Mobile will be rebuilt, shed and other buildings erected. The entire property will be dredged and the entire

river front devoted to import and export business.

Thomas.—Means & Fulton Iron Works of Birmingham have received contract at \$60,000 for improvements at Thomas for Republic Iron & Steel Co.; improvements include erection of stockhouse 63x91 feet, stockyard to handle ore and limestone and 24 bins.

ARKANSAS.

Dodd City—Zinc and Lead Mines.—Pilot Rock Zinc & Lead Co. has been incorporated by W. Henry Sisson (president), Robert Sandstrom, Rile Hodge and others.

Harrison—Water-works and Sewerage.—C. A. Reese of Fayetteville, Ark., is the engineer reported to make surveys and estimates for proposed water-works and sewerage reported during the week.

Harrison—Electric Plant and Ice Factory. Chartered: Harrison Electric Light & Ice Co., by N. W. Fellows, Springfield, Mo.; N. C. Hines and R. M. Fellows.

Madison County—Oil Wells, etc.—Chas. A. Horner, Fleming Howell, A. B. Fanegner, F. M. Rood and others have incorporated at Clarksburg, W. Va., the West Virginia Mineral, Oil & Gas Co., with capital stock of \$25,000, to operate for minerals, oil and gas in Madison county.

Malvern—Electric Plant and Water-works. City will issue \$20,000 of bonds for water-works and electric-light plant. Address "The Mayor."

Paragould—Heading Mill.—Pekin Stave Co. is erecting new heading plant.

Paragould—Ice Plant.—E. B. Perkins will erect ice plant, as recently reported. Company is organizing, with \$50,000 capital, and plant will be of thirty tons capacity.*

Pine Bluff—Beet-sugar Mill.—American Beet Sugar Co., Henry B. Oxnard, president, has purchased 80,000 acres of land in the Arkansas valley and will erect beet-sugar mill.

White Cliffs—Cement Works.—Eastern parties have purchased the property of the White Cliffs Lime & Portland Cement Co. for \$160,000 and propose organizing a new company and pushing developments.

FLORIDA.

De Leon Springs—Fruit Company.—Chartered: De Leon Springs Fruit & Produce Co., with capital stock of \$50,000, by Henry Benedict and others.

Jacksonville—Land Improvement.—Chartered: Riverside Land Co., with capital stock of \$30,000, by J. S. Turner, W. N. Shine, J. N. C. Stockton and others.

Pensacola—Cotton Compress.—Bierce Cotton Compress Co., recently established by W. H. Bierce of New Orleans, will increase capacity of its storage sheds to 10,000 bales; present capacity 3000 bales.

GEORGIA.

Atlanta—Furniture Factory.—Ware Manufacturing Co. has incorporated, with capital stock of \$10,000 paid, and is building a \$6500 plant; main building five stories, 70x200 feet, with 1000 feet of trackage; W. B. Ware, president; A. R. Weems, vice-president, and J. M. Dugger, secretary and treasurer.

Atlanta—Automatic Fire-alarm Company.—J. M. Stephens, G. T. Crawford, W. J. Bagby and C. P. Taylor have incorporated National Automatic Fire-alarm Co., with capital stock of \$50,000, to establish and operate system of electric fire-alarms, extinguishers and electric signals, and to manufacture the electrical appliances used.

Bartow County—Graphite Mines.—R. E. Watson, Austell Building, has closed a trade with Chicago parties for graphite property known as "Reservoir Mountain," in Bartow county; mining and shipping will be commenced within thirty days, and it is understood that later arrangements will be made for grinding and floating the ore at the mines.

Blue Ridge—Laundry.—Blue Ridge Steam Laundry is being established.

Camilla—Cotton Mills, Oil Mills, etc.—Camilla Supply Co. has been chartered, and will absorb mercantile interests of Turner & Bennett; also proposes to operate cotton gins, oil mills, spinning mills, saw and planing mills and other enterprises. J. C. Turner, T. R. Bennett and others are interested.

Cartersville—Ginnery, Compress, etc.—L. C. Glan, J. M. Field, F. A. Smith, M. G. Dobbins and others have incorporated Farm-

ers' Ginning & Fertilizer Co., with capital stock of \$4000, and privilege of increasing to \$100,000, for ginning and compressing cotton, manufacturing fertilizers, etc.

Covington—Telephone System.—Covington Telephone Co., organized with C. C. Brooks, president, has commenced work on construction of its proposed system.

Fitzgerald—Hardware Company.—D. M. Da Lee and others have incorporated Da Lee-Johnson Hardware Co., with capital stock of \$10,000.

Griffin—Ice Plant.—J. Eli Brewer, proprietor of Griffin Ice Works, will install an additional 20-ton plant.

Higgins—Flour Mill.—J. W. Fleming and T. J. Higgins are building flour mill.

Juliette—Ginning and Milling.—W. P. Glover of Jones county, S. R. Jacques & Tinsley Company have incorporated Juliette Mining Co., with capital stock of \$35,000 and privilege of increasing to \$100,000, for mining, milling and manufacturing.

Nickajack—Woolen Mill.—S. B. Love and John W. Rice have incorporated the Concord Manufacturing Co., with capital of \$25,000, to continue operation of their woolen mill; will also manufacture trousers.

Savannah—Lampblack Works.—Southern Lampblack Works, recently burned, is being rebuilt.*

Savannah—Land Improvement, etc.—John E. Harris, W. J. Kelly and others have incorporated Interstate Land Co. (capital stock \$25,000 and privilege of increasing to \$250,000) for improving real estate, developing phosphate mines, manufacturing naval stores, etc.

Tifton—Cotton Ginnery.—Tifton Ginning Co. has organized, with J. Lee Ensign, president; E. P. Bowen, secretary and treasurer, who, with H. H. Tift, H. Kent, E. P. Bowen and L. G. Manard, form board of directors, to erect ginnery; capital stock is \$50,000.

Tifton—Lumber Mill.—J. J. O'Neal and W. A. Patton of Rome and W. C. Jenkins of Tifton have incorporated Tifton Lumber Co. to conduct planing mills, adding later variety works; capital stock is \$10,000, with privilege of increasing to \$100,000.

KENTUCKY.

Calhoun—Oil Wells, etc.—Isola Oil & Coal Co. has been incorporated, with capital stock of \$50,000, by R. R. Bemiss, J. M. Brown and J. F. Smith, all of Rockport, for developing oil wells, coal lands, etc.

Louisville—Medicine Factory.—Thomas & Bohue have made plans for addition to factory of California Fig Syrup Co.

Louisville—Mercantile.—Crutcher & Starks have incorporated, with capital stock of \$200,000, to succeed firm of the same name. John P. Starks, Isaac F. Starks, G. R. Burton are incorporators.

Louisville—Oil Wells.—Sun Oil & Gas Co., reported recently as incorporated, has sunk one well and is preparing to drill two more in Wayne county. Jas. S. Escott is secretary.

Louisville—Steel Plant.—It is reported that the proposed \$3,000,000 company for establishing an open-hearth steel plant will be organized within sixty days and proceed to build the works. Messrs. Thomas W. Fitch of Pittsburg, Pa., and Davis & Kelly of the Davis & Kelly Axe Co., Louisville, are said to be interesting themselves in the enterprise.

Mayfield—Coal and Ice Company.—Chartered: People's Coal & Ice Co., with capital stock of \$20,000, by G. W. Sharp, R. E. Griffith and others.

Murray—Tobacco Factory.—Z. T. Connor & Co. has been formed by Z. T. Connor and R. Downs for the manufacture of twist and smoking tobacco.

Newport—Lithographing Company.—Donaldson Lithographing Co. contemplates erecting an addition to its factory.

Pittsburg—Coal Mines.—Pittman Coal Co., S. V. Rowland, general manager, is installing a series of shafting for increasing mining capacity.

Richmond—Cigar Factory.—Central Kentucky Cigar Co. has increased capital stock from \$6000 to \$10,000.

Wickliffe—Oil Wells, etc.—G. S. Hardy, M. R. Porter, E. B. Little of Union City, Tenn.; T. J. Neely, Matt Smith and others of Wickliffe have chartered Wickliffe Oil & Mining Co., with capital stock of \$800,000, to develop oil, gas, lead, coal and other minerals.

Woodbine—Coal Mines.—Jellico Coal Mining Co. is opening new mines and making other improvements.

LOUISIANA.

New Orleans—Cold-storage Plant.—New Orleans Cold Storage Co. has accepted plans of Favort & Livaudais for its proposed plant, which will be five stories, of steel and brick, and contain 500,000 cubic feet of storage space.

New Orleans—Transportation Company.—Samuel F. Heaslip, Maurice Stern, William Lynd and others have incorporated the Crescent Forwarding & Transportation Co., Limited, with capital stock of \$25,000, to conduct transportation business.

New Orleans—Registry.—Chartered: New Orleans Registry Co., Limited, with capital stock of \$5000, by Albert Heller, Joseph Seebach and Simon Levy.

New Orleans—Livery, etc.—Wm. Le Monnier and others have incorporated the Peters-Le Monnier Company, Limited, with capital stock of \$5000, for conducting general livery and boarding-stable business and that of funeral directors and embalmers.

New Orleans—Mineral and Oil Wells, etc. John S. Lombard, John A. Linville, J. T. Bath, Max Hubert and others have incorporated Andes Oil & Mineral Co., Limited, with capital stock of \$200,000, for development of oil and mineral properties, refining oils, etc.

MARYLAND.

Baltimore—Laundry.—Elite Laundry Co. has been chartered by John W. Lowe, G. A. Klinefelter, W. N. Slack and others, with capital stock of \$5000.

Baltimore—Building Company.—Chartered: Maryland Trust & Building Co., with capital stock of \$150,000, by Carroll Van Ness, Arthur H. Hall, George Brown and others.

Baltimore—Milk-can Factory.—Ezekiel Mills, Jr., Wm. B. Briggs, J. Booker Clift and others have incorporated Mills Screw Top Milk Can Co. for manufacture of patented milk can; capital stock is \$5000.

Baltimore—Brick Works.—Baltimore Vitri-fied Clay Co. has been incorporated under Delaware laws, with capital stock of \$500,000.

Cumberland—Brewery.—Cumberland Brewing Co. is having plans made for erection of addition to brewery, which will increase capacity from 18,000 to 30,000 barrels.

Cumberland—Glass Works.—Queen City Glass Works has been improved and renovated, and will resume operations September 1.

Cumberland—Glass Factory.—Eastern parties will, it is reported, establish a 16-pot factory for manufacture of fancy glassware in South Cumberland; \$50,000 will be required, of which \$30,000 has been subscribed.

Ridgely—Cannery.—Jonas Shaner has established a cannery.

MISSISSIPPI.

Batesville—Spoke Factory.—Company has been organized, with C. B. Vance, president; W. M. Keith, vice-president, and J. C. Price, secretary and treasurer, for establishment of spoke factory.

Columbus—Sash, Door and Blind Factory.—Battle Bell, T. B. Franklin and D. S. McClanahan will organize company for establishment of sash, door and blind factory.

Enterprise—Lumber Mill.—Brookpark Lumber Co. of Minnesota, which recently purchased the saw-mill, etc., of Berry Bros. at Enterprise, will expend \$50,000 in improvements; five new dry-kilns are now being erected and other changes made.

Fayette—Water-works, Electric Plant, etc. City will issue \$10,000 of bonds for construction of water-works recently reported and \$4000 of bonds for purchase of the Fayette oil works and electric-light plant. Address "The Mayor."

Greenwood—Telephone Company.—Chartered: Yazoo Valley Telephone & Telegraph Co., with capital stock of \$150,000, by Harvey Meyers, W. D. Crist, F. C. Smith and others.

Greenwood—Sewerage and Water-works.—C. E. Wright has received franchise for construction of sewerage system, water-works and electric-light plant.

Hazlehurst—Veneer Factory.—American Veneer Manufacturing Co. has been organized for manufacturing veneers, baskets, etc.

Hazlehurst—Electric Plant and Water-works.—City will issue \$35,000 of bonds for

establishment of an electric plant and water-works. Address "The Mayor."

Oxford—Sewerage System.—The city is to open bids soon on the construction of its proposed sewerage system, for which \$20,000 will be available. Schuerman & Brown of Nashville, Tenn., have prepared plans and specifications. R. S. Adams is mayor.*

Sardis—Water-works.—City will hold an election August 19 to decide construction of water-works recently mentioned. Address "The Mayor."

MISSOURI.

Higginsville—Oil and Gas Wells.—Lafayette Oil & Gas Co. has been incorporated, with capital stock of \$100,000, by Joseph W. Layne, Jas. L. Warren, J. H. Burton and others.

Kansas City—Stockyards.—Kansas City Stockyards Co. has increased capital stock from \$7,500,000 to \$8,250,000.

Kansas City—Glass Works.—Chartered: Interstate Glass Co., with capital stock of \$50,000, by Jos. J. Heim, Louis E. Pitts, J. D. Riddell and others.

Kansas City—Asphalt Plant.—Parker-Washington Paving Co. will rebuild its \$10,000 asphalt plant, reported burned.

St. Joseph—Clothing Factory.—Chartered: New Palace Clothing Co., with capital stock of \$25,000, by Nathan Block, M. A. Mayer and others.

St. Joseph—Clothing Factory.—Chartered: Louis Simpson Clothing Co., with capital stock of \$12,000, by Herman Simpson and A. J. Joffe.

St. Louis—Woodworking Factory.—Hafner-Lothman Sash & Door Manufacturing Co. will rebuild its \$150,000 plant and warehouse, reported burned.

St. Louis—Tea Company.—George Cousins Tea Co., with capital of \$2000, has been incorporated by Jessie Cousins, George Cousins and others.

St. Louis.—Chartered: J. H. Schroeder Bitters Co., with capital of \$2500, by J. H. Schroeder and others.

St. Louis—Creamery.—Chartered: Continental Creamery Co., with capital stock of \$10,000, by S. F. Lloyd, W. G. Lloyd and J. A. Lloyd.

NORTH CAROLINA.

Biscoe—Gold Mine.—Iola Mining Co. has purchased property and will prospect for gold.

Bosticks Mills—Ochre Mines.—J. L. York is developing ochre and sienna mine, and will install dry paint grinding machinery and machinery for making light barrels for same.*

Charlotte—Cotton Mill.—Alpha Mills, reported last week as remodeling plant and expending \$250,000 for improvements, has reorganized and taken name of Orient Manufacturing Co., with H. D. Wheat, president.

Charlotte—Water-works.—The construction of a new system of water-works at a cost of \$900,000 is talked of. Address Superintendent Campbell of the water board.

Concord—Smelting Plant.—United States Smelting & Refining Co. of 320 Broadway, New York, contemplates construction of the smelting and refining plant recently mentioned.

Elliott—Cotton Mill.—It is reported that Marion Butler will build a cotton mill, Western parties to be interested.

High Point—Furniture Factory.—G. R. Alford of Holly Springs will establish furniture factory at High Point.

Indian Trail—Gold Mine.—J. C. Bates of New York has commenced development work on gold mine.

Kinston—Tobacco Company.—Chartered: W. C. Thomas Tobacco Co., by J. W. Grainger and others.

New Berne—Oil Refinery.—New Berne Cotton Oil and Fertilizer Mills contemplates installing a refinery with capacity of 2500 gallons daily.*

North Carolina—Gold Mines.—Chas. H. Studin, 115 Broadway, New York, can give information concerning the Person Consolidated Copper & Gold Mines Co., previously reported as incorporated to operate in North Carolina.

Reidsville—Telephone Exchange.—Southern Bell Telephone & Telegraph Co., Charlotte, N. C., has made application for franchise for telephone exchange at Reidsville.

Waco—Knitting Mill.—Waco Knitting Mill has been organized, with W. A. Goode, president; M. C. Beam, vice-president, and M. E. Goode, secretary, and is establishing plant; building will be 34x60 feet, one story, to contain twenty-five machines; \$6000 will be invested, to be increased to \$10,000 later.

Wadesboro—Water-power Development.—Fred J. Cox and associates have secured

options on Bullitt Falls property with a view to organizing company for development of and transmitting power to several towns for lighting and manufacturing. It is said that 2000 horse-power is available.

Washington—Woodworking Plants, etc.—Wm. Marvin of Findlay, Ohio, is the purchaser of the timber lands reported last week, and will erect, as was stated, large stave and heading and other lumber plants to develop the timber.

SOUTH CAROLINA.

Bowling Green—Knitting Mill.—G. D. Flanagan, R. M. Dulin, R. T. Smith and others are interested in establishment of \$12,000 knitting mill; \$7000 has been subscribed.

Cameron—Mattress and Springbed Factory.—Wesner & White Manufacturing Co. will install additional machinery for enlarging factory.*

Charleston—Creamery.—Chartered: Mutual Creamery Co., with capital stock of \$5000, with Henry B. Jennings, president, and G. S. Jennings, secretary.

Charleston—Importing and Exporting.—G. A. Huguelot and H. S. Bayer have incorporated Henry Bayer & Son Co., with capital stock of \$25,000, for importing and exporting.

Columbia—Granite Quarry.—J. E. Malloy of Columbia, J. L. Cobb and M. Wight Cobb of Lincolnton, N. C., have incorporated Cobb-Malloy Rough & Crushed Stone Co., with capital stock of \$12,000, to operate quarry and supply granite in rough, crushed or finished form.

Columbia—Rock Quarry.—J. E. Malloy and John L. Cobb have organized a \$6000 company for development of rock quarry.

Florence—Ice Plant.—Florence Ice, Fuel & Cold Storage Co. is organizing to operate the 15-ton ice plant reported last week to be erected by J. F. Hodge.

Langley—Clay Works.—South Carolina Clay Works has incorporated, with capital stock of \$50,000, and W. J. Oliver, president; R. H. Walker, vice-president, and F. B. Henderson, secretary and treasurer.

Union—Telephone Exchange.—Southern Bell Telephone & Telegraph Co. (principal office, Charlotte, N. C.) will establish an exchange at Union, as recently reported, making all circuits metallic, equipment to be of the latest common battery type; will also build a copper metallic circuit toll line from Union to Spartanburg, twenty-eight miles.

TENNESSEE.

Bristol—Flour Mill.—W. A. Sparger & Co. will erect roller flour mill; building will be four stories, with elevator capacity for 20,000 bushels, daily capacity of 200 barrels of flour and 1000 bushels of wheat.

Charleston—Lead and Zinc Mines.—T. T. Wilson has sold the Chatto lead and zinc mines to Eastern capitalists for \$10,000.

Chattanooga—Machine Shop.—Lane Lyle, who recently formed the Standard Machinery Co., has awarded contract for erection of two-story brick machine shop building to cost \$10,000.

Chattanooga—Power-house.—Chattanooga Electric Railway Co. will expend \$80,000 in general improvements, which include additional machinery to power-house.

McMinnville—Flour Mill.—J. A. Norheutt is building flour mill.

Memphis—Telephone Exchange.—Memphis Telephone Co. will erect three-story exchange building of brick and stone at a cost of \$30,000.

Memphis—Woodworking Factory.—Mack A. Montgomery, Geo. R. Hill, Hugh B. Hill and others have incorporated Montgomery, Hill & Fulcher Hardwood Dimension Saw Mill Co., with capital stock of \$25,000.

Morristown—Woodworking Factory.—D. M. Hobson of Bristol, Tenn., and Craig Bros. of Morristown have organized the Morristown Dimension Lumber Co. and secured building, which will be equipped for manufacture of wagon materials, shuttle blocks, insulator pins, balusters, etc.*

Murfreesboro—Oil Wells.—Chas. H. Shaw of Cincinnati, E. Watkins of Chattanooga, R. A. Shiflet of Knoxville, S. W. Coons and W. S. Duckworth of Nashville have organized the Tennessee Southern Oil Co. for development of oil wells in the Rutherford-Bedford county field, and if successful developments are assured company will be organized for constructing pipe line to Nashville and another company formed for refining the oil. Address W. S. Duckworth.

Nashville—Telephone Company.—Luke T. Walker, J. W. Scott, E. T. Peck, W. M. Brandon and others have incorporated the Luke T. Walker Telephone & Telegraph Co., with capital stock of \$10,000.

Tennessee—Lumber Mill.—Morton Butler, Chas. R. Dickerson, Kellogg Fairbanks and others, all of Chicago, Ill., have incorporated, with capital stock of \$300,000, the New River Lumber Co. to operate in Tennessee.

Winchester—Machine Shop.—Vaughan & Fuller will rebuild their machine shop recently burned.*

TEXAS.

Baird—Water-works Improvement.—City will issue \$4500 of bonds for improving water-works system. Address "The Mayor."

Bay City—Irrigation Canal.—Colorado Canal Co., previously reported incorporated, has commenced work on irrigation ditch, which will be completed by March 1 and will have capacity for irrigating 5000 acres of rice.

Beaumont—Oil Wells.—Cleveland & Eastern Texas Oil Co., with capital stock of \$100,000, has been incorporated by Chas. A. Patterson, Chas. H. Clump, Chas. S. Walsh and others of Cleveland, Ohio; H. S. Powell of Beaumont and others.

Beaumont—Oil Reservoir.—Export Oil & Pipe Line Co. is negotiating for an oil reservoir with capacity of about 500,000 to 1,000,000 barrels; company's plans contemplate reservoir lined with brick and cement.

Beaumont—Iron Furnaces.—A \$2,000,000 Northern company is investigating the use of Beaumont oil as fuel with a view of building several iron furnaces to employ 1000 men. Possibly T. W. Shepard can give information.

Beaumont—Oil and Gas Company.—Beaumont Gas & Fuel Co., to deal in oil and gas, has been incorporated, with capital stock of \$100,000, by A. H. Brandt of Port Arthur, D. W. Glascock of Beaumont and others.

Beaumont—Oil Wells.—Chartered: Texas-Paris Oil Co., with capital stock of \$500,000, by W. M. Fitzhugh of London, Baron Robert Oppenheim of Paris, France; W. L. Thompson, John Kimball and H. T. Beauregard of Beaumont.

Bryan—Ginnery and Oil Mill.—Chartered: Bryan Cotton Oil Co., with capital stock of \$60,000, by J. W. English, president; J. W. Singleton, vice-president, and A. D. McCone, treasurer; purchased and will operate established ginnery and oil wells.

Corsicana—Water Supply.—Corsicana Water Supply Co. will sink another artesian well to augment supply of water.

Dialville.—Chartered: Dialville Fruit & Vegetable Association by J. J. Dial and others.

El Paso—Stockyards.—Chartered: Union Stockyards Co., with capital stock of \$50,000, by H. M. Mundy, W. H. Austin and others.

El Paso—Packing-house.—It is reported that Baldwin & Co. of Kansas City, Mo., will expend several hundred thousand dollars to establish stockyards and packing-house.

Farmersville—Mill and Electric Plant.—Farmersville Milling Co. and Farmersville Electric Light Co., reported lately as incorporated, have plants in full operation, and previously operated as the Farmersville Mill & Electric Light Co.

Fort Worth—Packing Plants.—Messrs. Swift & Co. and Armour & Co., both of Chicago, will each erect packing plants to cost about \$1,000,000 and employ about 1000 men. Contract to this effect has been closed through the Fort Worth Stockyards Co., and local parties will furnish a bonus of \$100,000 to secure the extensive industries. The establishment of these plants has been in contemplation for some time, and reports stating they would be built have been mentioned in these columns. J. Ogden Armour, Chicago, is president of Armour & Co.; Gustavus F. Swift, Chicago, is president of Swift & Co., and G. W. Simpson, Fort Worth, is president Fort Worth Stockyards Co.

Georgetown—Oil Wells.—Georgetown-Waco Oil Co., with capital stock of \$150,000, has been chartered by F. W. Carothers, C. H. Leavell, C. A. Wilcox and others.

Houston—Hardware Company.—Chartered: Ewing-Salging Hardware Co., with capital stock of \$40,000, by Orville Ewing and others.

Huntsville—Oil Wells.—J. D. Milton Oil & Development Co. of San Francisco has leased property near Huntsville, and will bore a 16-inch well. Address care Ed. Spell at Huntsville.

Jacksboro—Oil Wells.—Jacksboro Oil Co. has been incorporated, with capital stock of \$10,000, by J. H. Taylor, H. H. Skelton, W. B. Sharp and others.

La Grange—Cotton-oil Mill.—La Grange Cotton Oil & Manufacturing Co. has been organized and purchased La Grange Oil Mill; improvements have been made and later machinery will be added for manufacture of soap, etc.

Longview—Mercantile.—Chartered: F. T.

Rembert Company, with capital stock of \$30,000, by F. T. Rembert and others.

Mansfield—Educational.—Chartered: Mansfield Academy, with capital stock of \$25,000, by W. D. House, W. B. Knight and others.

Maxey—Gin and Grist Mill.—Maxey Gin & Mill Co. has been incorporated, with capital stock of \$6000, by J. C. Schraeder, W. Wheeler, R. G. Cloud and others.

Merkel—Creamery, Cheese Factory and Ice Plant.—W. N. Grimmer will rebuild his creamery, cheese factory and ice plant recently burned.*

Mineral Wells—Mercantile.—E. W. Perry and others have incorporated Mineral Wells Instalment Co., with capital stock of \$50,000.

Orange—Improvement Company.—Ira A. Scott, J. H. Dawson, A. J. Lyons and others have incorporated the Sabine Improvement Co., with capital stock of \$25,000, for improvement purposes.

Sealy—Creamery.—Chartered: Sealy Creamery Association, by W. J. Lowe, W. A. Sanders and W. G. Pretzsch for establishing creamery and cheese factory; capital stock \$7500.

Sherman—Ice Factory.—Artesian Ice Co. has been organized for establishing a 50-ton plant; R. S. Dorchester, secretary.*

Waco—Water-works.—Chester B. Davis, Wall street, New York, has been engaged to investigate cost of new works, for which \$300,000 was recently voted. Address Mayor Riggins.

Waxahachie—Flour and Grist Mill.—H. S. Brown has sold his grist mill to parties who will operate it and in connection establish a 60-barrel flour mill.

VIRGINIA.

Berkley—Brick Plant.—H. Goodman & Bro. have organized as the Goodman Brick Co., with capital stock of \$5000, and commenced erection of brick works.

Curlew—Machine Shop.—Aubrey Pool of Glen Jean will erect building in and remove his shop for manufacture of mining tools to Curlew.

Disputanta—Lumber Mill.—Bull Lumber Co. of Norfolk is erecting a two-story all-tight steam-drying lumber plant at Disputanta.

Luray—Furniture Factory.—Chas. S. Landrum, N. H. Ford, F. W. Grove and others will establish a furniture factory.

Manchester—Paper Mills.—Standard Paper Manufacturing Co. has chartered, with capital stock of not less than \$75,000 nor more than \$100,000, for manufacture of all kinds of paper, soda pulp, sulphites, etc. It is said that \$75,000 worth of new machinery will be purchased. This company previously purchased the Old Dominion Cotton Mills. C. H. Sutton is president; D. O. Davis, vice-president, and Robert S. Crump, secretary and treasurer, all of Richmond.

Norfolk—Oil Works.—McNally Oil Manufacturing Co., manufacturer of castor, peanut and other vegetable oils, will erect a six-story building to cost \$60,000.

Norfolk—Commission Company.—Robert Johnson Company has been incorporated, with capital stock from \$10,000 to \$50,000, to conduct brokerage and commission business. Robert Johnson is president, and Harry W. Keeling of Berkley, vice-president, secretary and treasurer.

Petersburg—Machine Shops and Foundry.—Appomattox Iron Works, F. Steere & Son, has purchased the plant of Steele & Alexander at Weldon, N. C., and will add same to its present extensive plant.

Portsmouth—Vinegar Factory.—R. D. Guy and G. D. Savage are forming a \$5000 stock company for manufacture of vinegar, flavoring extracts, baking powder, etc.

Richmond—Furniture Company.—Hopkins Furniture Co., to deal in furniture, has been incorporated, with capital stock of \$10,000, by O. B. Hopkins, president; Warren H. Mercer, secretary and treasurer, and others.

Richmond—Steel Plant, etc.—It is rumored that a \$3,000,000 company will be formed by local and foreign capitalists for the erection of a basic-steel plant on the Chesterfield side of James river. John L. Williams & Sons have purchased controlling interest in the Old Dominion Iron & Steel Works this week, and it is rumored they may have in contemplation the steel company noted.

Richmond—Asphalt-paint Works.—Alcatraz Asphalt Paint Co. has been organized, purchased rights from a Philadelphia company and will manufacture an asphalt paint. Address 3200 Williamsburg avenue.

Richmond—Glass Factory.—C. F. Sauer Company and Messrs. Baldwin & Brown are reported to establish a glass factory.

Salem—Tannery.—The Salem Tannery is

erecting additions and making improvements to increase capacity from 200 to 300 hides per day.

Staunton—Evaporating Plant.—Staunton Evaporating Co. has commenced erection of proposed buildings, which will be equipped as an evaporator. W. A. Treacott of Rochester, N. Y., is proprietor, and A. L. Worthington, also of Rochester, will be general manager.

Winchester—Woolen Mill.—Virginia Woolen Co. is reported as to double its woolen mill.

WEST VIRGINIA.

Clarksburg—Coal Mines.—L. F. Ruth and Rockwell Marietta of Connellsville, Pa., have completed the sale of the Colonia Coal & Coke Co., with 3000 acres of coal lands, three active mining plants, etc., to a New York syndicate. Charter of Flemington & Astor Railroad is also included in sale, and it may be extended to connections.

Fairmont—Brokerage Company.—Chartered: Fairmont & Clarksburg Brokerage Co., with capital stock of \$5000, by J. F. Conway and others.

Sistersville—Cutlery and Novelty Works.—Ohio Valley Cutlery & Novelty Co. has made a proposition to the Board of Trade for establishment of a plant.

Wheeling—Coal Mines.—Edw. B. Hitchman of Canonsburg, Pa.; E. A. Upstill of Cleveland, Ohio; F. Hoosac and William H. Keech of Bridgeville, Pa., and others have incorporated Hitchman Coal Co., with paid-in capital of \$300,000, for development of coal lands in Marshall county; company owns 3300 acres and will have slack water for its tipples.

BURNED.

Boonsboro, Md.—Boonsboro Fruit Package Works; loss about \$5000.

Palestine, Texas.—Palestine Pork Packing Co.'s plant; loss about \$30,000.

Petersburg, Va.—Petersburg Hosiery Co.'s mill damaged extensively.

Rockdale, Texas.—Hutcherson & Alford's gin; loss \$3500.

San Antonio, Texas.—P. Grooms' mattress factory; loss \$3000.

Sutherland Springs, Texas.—Jesse Tiner's gin.

Thompsonville, Texas.—G. H. Hoffield's cotton gin; loss \$3000.

BUILDING NOTES.

Aberdeen, Miss.—Jail.—City contemplates erecting new jail. Address "The Mayor."

Aberdeen, Miss.—Vault.—S. H. Berg has contract at \$4195 for building fireproof vault for chancery clerk's office.

Abilene, Texas—Asylum.—Shurr & Brilliant of Austin have contract at \$159,400 for erection of proposed asylum at Abilene.

Atlanta, Ga.—Buildings.—Hugh T. Inman will erect three-story store building to cost \$15,000, and J. W. English will erect three-story store building to cost \$25,000.

Baltimore, Md.—Dwellings.—Chartered: Gwynn's Falls Construction Co., with capital of \$2000, for construction of dwellings, etc., by Nicholas W. Steele, G. W. Longley, T. B. Edmonston and others.

Baltimore, Md.—Building.—Henry Smith & Sons have received contract for erection of George Klingenstein's proposed \$12,000 building previously reported.

Baltimore, Md.—Bank.—Citizens' National Bank has purchased site at \$7000 for proposed enlargement to its building, for which Jos. Evans Sperry is preparing plans.

Baltimore, Md.—Bank Building.—Baldwin & Pennington have completed plans for proposed structure of the National Bank of Commerce, and bids will be received from contractors until August 23.

Bartow, Fla.—Bank Building.—Polk County National Bank has purchased site and will erect building.

Bay City, Texas—Warehouse.—Bay City Rice Milling Co., lately reported incorporated, has commenced work on warehouse 64x200 feet.

Bay St. Louis, Miss.—Jail.—Supervisors of Hancock county, E. H. Hoffman, clerk, will award contract at public outcry September 2 for erection of jail in accordance with plans and specifications. Bond will be required and usual rights reserved.

Berkley, Va.—Schools.—School board of District No. 5, Norfolk county, Virginia, will open proposals September 2 at Berkley for construction of two brick school buildings and for heating same by hot air system. Plans and specifications may be seen at town hall of Capt. M. C. Keeling, Berkley,

or at office of P. Thornton Marye, architect, Newport News. Certified check for \$300 must accompany each bid. Bond required and usual rights reserved.

Birmingham, Ala.—Building.—Southern Club is having plans made by Walters & Ullman for erection of proposed building; contract will be awarded soon.

Birmingham, Ala.—Office Building.—A. W. Cochran has had plans made by Ryan & Son for erection of a six-story office building, 50x100 feet, to cost \$20,000; architects are now receiving bids for erection.

Birmingham, Ala.—Jail.—A. Stockmar was the lowest bidder (\$12,500) for proposed repairs to city jail.

Charlotte, N. C.—Stores and Flats Building.—Southern Real Estate, Loan & Trust Co. has awarded contract for erection of proposed stores and flats building to Ahrens & Foll; building will be two stories, of brick, 158 feet long.

Chattanooga, Tenn.—Residence.—H. S. Probasco will erect \$10,000 residence.

Chattanooga, Tenn.—Hotel.—Stanton House, T. V. Barton, manager, will be enlarged by erection of fifty additional rooms.

Chattanooga, Tenn.—Building.—G. B. & A. J. Glenn will erect a three-story brick building.

Clifton Forge, Va.—Hotel.—The building reported lately to be erected by W. E. Circle of Glen Wilton will be a hotel, three stories, 50x75 feet.

Columbus, Miss.—Courthouse.—D. S. McCanahan has received contract at \$18,000 for remodeling and repairing county courthouse.

Cumberland, Md.—Schools.—"County Commissioners" have appropriated \$7000 for erection of schoolhouses at several towns.

Douglas, Ga.—Hotel.—R. H. and Bud Tanner will erect hotel.

East Lake, Ala.—School.—W. F. May & Co. of Birmingham have received contract at \$15,850 for erection of proposed school building at East Lake.

Elkins, W. Va.—Courthouse.—City will hold election October 5 to decide issuance of \$75,000 of bonds for courthouse. Address "The Mayor."

El Paso, Texas—Depot.—It is reported that work will soon be commenced on construction of the proposed \$250,000 union depot. Address B. Forrest Hammett, Jr., of Union Depot & Terminal Co.

Gainesville, Fla.—Building.—County commissioners have purchased site at \$1000 and will erect two-story brick building 55x90 feet, to be used as armory.

Greenville, Miss.—Church.—First Presbyterian congregation has awarded contract to Chas. Peane of Indianapolis, Ind., at \$15,000 for erection of proposed edifice.

Haxelhurst, Miss.—Courthouse.—J. Riely Gordon Co. of Dallas has prepared plans for Copiah county's proposed \$50,000 courthouse. Contract will be awarded in October. Address "County Clerk."

Holly Springs, N. C.—Hotel, etc.—It is reported that a company has purchased mineral springs, and will improve property, erecting hotel, school, etc. Address G. B. Alford.

Hot Springs, Va.—Hotel.—James Griffin & Sons of Cincinnati, Ohio, have received contract for erecting the new Homestead Hotel at Hot Springs.

Houston, Texas—Depot.—International & Great Northern Railroad Co. has secured site at Houston for its proposed freight depot. Leroy Trice is general superintendent, Palestine.

Huntsville, Ala.—Hotel.—Exchange Hotel is being enlarged by erection of a three-story annex.

Irvine, Ky.—Buildings.—W. T. B. Williams and Thomas Wallace will erect two-story brick business block to cost \$5000.

Jacksonville, Fla.—Buildings.—County voted August 1 the issuance of \$100,000 of bonds for reconstruction of buildings burned by recent fire; P. D. Cassidy, clerk.

Jacksonville, Fla.—Hotel.—Dr. Sollace Mitchell is having plans made by Architect Gilkes for erection of a three-story addition, 40x50 feet, to the New Duval House.

Jacksonville, Fla.—Residence.—Burwell & Freeman have received contract for erection of residence for G. W. Wilson.

Kansas City, Mo.—Buildings.—John Thatcher has had plans made by John W. McKecknie for erection of brick and stone building to cost \$45,000. Chas. A. Smith and F. S. Rea are making plans for new office and warehouse for Gelsner Manufacturing Co., to be of pressed brick, 75x120 feet, and cost \$40,000. Van Brunt & Howe are making preliminary plans for \$40,000 dwelling for Jos. T. Bird. J. T. Sparks will erect \$25,000 building.

Knoxville, Tenn.—Depot.—Nicholas Itner of Atlanta, Ga., has received contract for erection of Southern Railway Co.'s proposed \$100,000 depot at Knoxville; building will be two stories, of pressed brick, with marble trimmings, slate roof and partial steel construction.

Lafollette, Tenn.—Hotel.—Chartered: Cumberland Inn Co., with capital stock of \$30,000, by W. S. Bowman, A. J. Carr, R. B. Winder and others.

Lake Charles, La.—Courthouse.—Proposals will be opened September 5 for remodeling and additions to the parish courthouse previously noted. Plans and specifications can be seen at office of R. D. Steele, Houston, Texas, and at Dallas (Texas) and Shreveport (La.) offices of J. Riely Gordon Company, architects. Address "President Police Jury."

Lake City, Fla.—Courthouse.—Plans have been prepared by Frank P. Milburn of Columbia, S. C., for erection of \$35,000 courthouse at Lake City. Address R. M. Booser, chairman county commissioners.

Lexington, N. C.—Dwelling.—J. R. McCrary will erect dwelling.

Lexington, N. C.—Depot.—J. R. Morris of Greensboro has prepared plans for proposed erection of Southern Railway's depot at Lexington; building will be 172x40 feet and cost \$5000.

Lumberton, Miss.—Hall.—Odd Fellows and Woodmen of the World will erect a two-story brick building.

Martinsburg, W. Va.—Church.—The Presbyterian congregation has had plans prepared for erection of a \$15,000 brick edifice. Address "The Pastor."

Morgan, Texas—Depots.—Gulf, Colorado & Santa Fe and the Texas Central railroads will build passenger and freight depots of fireproof material at Morgan.

Morganton, N. C.—Bank Building.—First National Bank has contracted with Architect Sloan for erection of a brick building.

Morristown, Tenn.—School.—City will issue \$10,000 of bonds for erection of school building. Address "The Mayor."

Mount Calm, Texas—Schoolhouse.—City has decided to erect new school building. Address "The Mayor."

Nashville, Tenn.—Building.—Warren, Neely & Co. will erect a seven-story business building; purchased site for \$18,500.

Paducah, Ky.—Building.—Joseph L. Friedman let contract to F. W. Katterjohn for erection of business building.

Raleigh, N. C.—Dormitory.—Contract for erection of new dormitory at Soldiers' Home has been awarded to Jacob S. Allen at \$4500.

Selma, Ala.—Warehouse.—Otto Erhart will erect warehouse 80x130 feet.

Spartanburg, S. C.—School.—School trustees have awarded contract to J. E. Grandy of Greenville for erection of two-story brick school building, 106x66 feet, with steam heat and all modern conveniences, after plans by W. B. W. Howe; cost \$20,000.

Stratford, Texas—Courthouse.—C. F. Rudolph, county clerk, will open bids August 12 for erection and completion of courthouse; plans and specifications at H. W. Wright's office at Amarillo, or in county clerk's office, Stratford. Usual rights reserved.

Tallahassee, Ala.—Hotel.—Contract has been awarded S. A. Austin and A. O. Harwell for erection of \$3000 hotel for Mrs. L. J. Haralson.

Terrell, Texas—Railroad Building.—Texas Midland Railway Co. will erect new office and general tool and supply room at Terrell.

Union, S. C.—Store Building.—A. H. Foster and others will erect store building after plans by F. P. Milburn of Columbia, S. C.

Vicksburg, Miss.—City Hall.—J. F. Bonds & Co. of Jackson, Miss., are the lowest bidders at \$30,300 for construction of proposed city hall at Vicksburg.

Wills Point, Texas—School.—John R. Finney, mayor, will open bids August 15 for erection of brick school building recently reported; plans and specifications at office of mayor and at Dallas office of architects, J. Riely Gordon Company.

RAILROAD CONSTRUCTION.

Railways.

Arkinda, Ark.—According to a dispatch, F. W. Vallent, chief engineer of Arkansas & Choctaw Railroad, Kansas City, Mo., will let contract August 26 for the Oklahoma and Indian Territory sections of the railway. The completed railway will be 300 miles long, extending from Arkinda through parts of Louisiana, Indian Territory, Oklahoma Territory and Texas to Wichita Falls, Texas. It is said that \$5,000,000 will be the cost of the system.

Ashburn, Ga.—J. C. Turner, W. N. Spence, T. R. Bennett and others of Camilla, Ga.; J. S. Betts, J. S. Shingler and others of Ashburn have applied for incorporation of Flint River & Gulf Railway Co. to construct railway from Ashburn to Bainbridge by way of Sylvester and Camilla, a distance of ninety miles. T. R. Bennett is secretary.

Benton, Ark.—Choctaw, Oklahoma & Gulf Railroad has let contract to Corrigan & Co. of Memphis, Tenn., for the construction of a 22-mile connecting link from near Benton to Butterfield; with purchases the company has made, this provides much of the proposed system.

Cape Girardeau, Mo.—Clarkson Branch St. Louis, Kennett & Southern Railroad Co. has been incorporated, with capital stock of \$40,000, to construct a 16-mile railroad. L. B. Houck, Chas. T. Lewis, Albert O. Phelan and others are interested.

Charleston, W. Va.—Chartered: Charleston & Kanawha Valley Power & Railway Co., with capital stock of \$500,000, to construct interurban electric railways, Montgomery, St. Albans and Kanawha Falls to be reached from Charleston. Incorporators are T. J. Carmack of Charleston, E. D. R. Sutton of Wilmington, Del.; Howard T. Goodwin, John W. Coburn and C. M. Coburn of Philadelphia, Pa.

Corsicana, Texas.—C. C. Waller is reported to have stated it is probable that work will be commenced soon on the construction of a railway from Corsicana to Sabine Pass. Mr. Waller has obtained franchise of the Corsicana Southern Railroad, a project that did not materialize.

Douglas, Ga.—A steam railroad will be constructed from Douglas to the Ocmulgee river, a distance of twenty-one miles, and work is to be commenced at once and be completed within four months by T. J. James of Adrian, Ga., president of the Wadley & Mt. Vernon Railroad. This latter extends from Wadley to Twerd, within four miles of the Ocmulgee river, and will be completed to there soon. There will then be a 40-mile gap from that point to where the new railroad mentioned above will reach the Ocmulgee.

Fort McCoy, Fla.—Lester Mill Co. has commenced grading for a steam railway to its mills; it is said rails have been purchased.

Harlow, Ark.—George D. Hope, S. M. Barnes, R. C. Holaday, S. J. Grinnett and E. M. Hope have incorporated Harlow & Northern Railroad, with capital stock of \$120,000, to construct railway in Calhoun and Dallas counties.

Jacksonport, Ark.—It is stated that Choctaw Northern Railroad will extend its branch from Jacksonport through Sharp and Lawrence counties to Salem, in Fulton county, and thence to Harrison. Chas. E. Ingersoll, Girard Building, Philadelphia, Pa., is president.

Joplin, Mo.—Cherokee & Red River Railway Co. has been incorporated, with capital stock of \$200,000, to construct railway from Joplin to Galena, Kans., by Wright W. Tuttle of New Haven, Conn., and others.

Lancaster, S. C.—Lancaster & Chester Railroad Co. has decided to issue \$125,000 in bonds for the completion of the work of changing its railway to a standard gauge, equipping with new rolling stock and for other improvements. The railway is twenty-nine miles long, and Leroy Springs is president.

Marion, S. C.—Plans are under way for extending the Carolina Northern Railroad to a connection with the railway to Georgetown and with the Cape Fear & Northern Railway. Wm. E. Ashley, Raleigh, N. C., is superintendent of motive power; Aug. Melcher is general manager, 316 Bourse, Philadelphia, Pa.

Nelson County, Va.—It is reported that Thos. F. Ryan of Norfolk contemplates constructing a railway in Nelson county.

Oneonta, Ala.—The Gadsden (Ala.) Commercial Club has appointed a committee to promote the extension of the Louisville & Nashville Railroad's branch from Oneonta to Gadsden, a distance of seventeen miles. It is said that an expenditure of about \$30,000 would be required.

Palmetto, Fla.—There is talk of the commencement of work on the proposed United States & West Indies Railway, and probably Col. J. L. Young of Plant City can give information.

Pulaski, Tenn.—Merchants and shippers contemplate applying for charter to construct a railway from Pulaski to Florence, Ala. If the project materializes it is proposed to utilize eighteen miles of roadbed that was made for a company previously projected.

Shade Gap, Md.—Shade Gap Railroad Co.

has started a corps of engineers to clearing off and grading right of way for its proposed system to Burnt Cabins and McConnellsburg, and thence to a connection with the Baltimore & Ohio. Edgar R. Wood of Hancock, Md., is president.

Spring, Texas.—A. R. Howard of Palestine, president of International & Great Northern Railroad, states that his company expects to have fifty additional miles of trackage in operation by September 15, which will make 115 miles in all. The completed system will be 263 miles long, passing through Fort Worth, Waco, Marlin, Calvert, Bryan and Navasota. Entire line is to be completed probably next year.

Sumter, S. C.—Sumter & Northern Railroad Co., capital stock \$100,000, has been incorporated to construct a steam railway from Sumter to McBee or Bethune, a distance of thirty-eight miles. The incorporators are A. Brooks Stuckey, Julian E. Harby and others of Sumter, Geo. H. Reid and others of Bishopville, S. C.

Tupelo, Miss.—Capt. H. P. Farrar, chief engineer, Jackson, Tenn., has completed maps, profiles and estimates for the construction of the proposed Alabama, Mississippi River & Gulf Railroad. The railway will extend from a point opposite Tupelo to Water Valley, thence to Clarksdale and Friar's Point, connecting at Friar's Point with New Orleans, Memphis & St. Louis by steamers and transfer to Helena, Ark., to connections with the Missouri Pacific and other systems. The total mileage will be eighty-one. John W. Cutrer of Clarksdale is preparing charter for the company. Z. D. Jennings of Water Valley is president.

Tyler, Texas.—M. L. Lynch, chief engineer of St. Louis Southwestern Railway Co., writes that the extension to Dallas, lately reported, will be constructed and that contracts are to be let soon. Rails and equipment have been provided. Extension will be thirteen miles long.

Washington, D. C.—Washington, Leonardtown & Point Lookout Railroad Co. will be chartered to construct electrical railway from Washington to Brandywine, to Mechanicsville, to Leonardtown, to Point Lookout, in Maryland, a distance of about ninety-eight miles. Company will capitalize at \$1,000,000. Damon Harris of Darby, Pa., has completed the survey. Company has office at 615 Walnut street, Philadelphia. Gen. R. C. White of Delaware being president; others interested are Dr. C. R. Morgan, secretary; C. E. Jones, manager; Frank A. Terry, Joseph F. Morgan and B. Harris Camelian of Philadelphia, Pa.

Weatherford, Texas.—Weatherford, Mineral Wells & Northwestern Railway Co. will open bids August 17 for grading, masonry and bridging from a point near Mineral Wells to Graham, a distance of about forty-five miles. Plans, profiles and specifications are on file with president. The usual rights are reserved and the usual bonds will be required. This work will be a part of the extensions mentioned last week as provided for by charter amendments. Address L. M. Fouts, president.

West Plains, Mo.—The railway lately mentioned will be electrical and is proposed for construction from West Plains to Mountain Home, Baxter county, Arkansas. Surveys and other details are expected to be arranged for soon. F. R. Cook of West Plains and M. V. B. Parker of Olath, Kans., are interested.

Street Railways.

Atlanta, Ga.—Atlanta Railway & Power Co. and the Atlanta Rapid Transit Co. have each obtained permission to build proposed extensions of their railways.

Bessemer, Ala.—The city council has granted franchise for the proposed Steel Cities Railway Co., which is represented by R. F. Hanneman.

Birmingham, Ala.—Birmingham Railway, Light & Power Co. contemplates extending its railway one and one-half miles.

Rutherfordton, N. C.—D. F. Morrow is interested in the movement for constructing an electrical railway to Asheville and Chimney Rock.

Shreveport, La.—People's Belt Railroad Co. has been incorporated, with capital stock of \$100,000, to construct a five-mile belt railway. Wm. L. Ingersoll, C. H. Minge, L. M. Carter, J. D. Wilkinson and others are interested.

Wheeling, W. Va.—City Railway Co. is now advertising its application to the city council for street-railway privileges.

Enclosed Multipolar Apparatus.—Bulletin No. 64, issued by the Paragon Fan & Motor Co. of 572 First avenue, New York, illustrates, describes and otherwise explains the advantages and superiority of the Paragon Enclosed Multipolar Apparatus.

Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Air Compressor.—Cardwell Machine Co., Richmond, Va., wants an air compressor, eighty pounds pressure, suitable for running about ten pneumatic tools; prices on both new and second-hand.

Barrel Machinery.—J. L. York, Bosticks Mills, N. C., is in the market for machinery for making light barrels.

Boilers and Engine.—Wanted—New or second-hand 200-horse-power Corliss engine and two 125-horse-power boilers, complete with smokestack, etc., feed-water pump and heaters. Address Box 51, Berkeley, Va.

Brick Machinery.—Marshall & Co., Sumter, S. C., want to correspond with manufacturers of machinery for making clay bricks.

Bridge.—L. H. Beach, engineer commissioner, Washington, D. C., will open bids August 31 for furnishing steel arch girders for Melan arch bridge, also bids for constructing said bridge. For blank forms, specifications, etc., address engineer.

Bridge.—M. J. German, Blue Ridge, Ga., will open bids August 19 for constructing two bridges after plans and specifications on file.

Bridge.—"Board of Revenue," Birmingham, Ala., will receive specifications for iron bridge to be constructed across Village creek; Colonel Jackson will have charge of the work.

Bridge.—Supervisors of Hancock county, E. H. Hoffman, clerk, Bay St. Louis, Miss., will award contract to lowest bidder at public outcry September 2 for constructing bridge. Bond required.

Building Materials.—W. E. Circle, Glen Wilton, Va., is in the market for lumber, doors, windows and blinds.

Building Materials.—A. B. Sites, 25 Enna avenue, Braddock, Pa., wants quotations on bill stuff, flooring, frames, sash, doors, blinds, slate, hardware and paint.

Building Materials.—Rev. Wm. Brayshaw, Valley Lee, Md., wants catalogues and price-lists on various kinds of building material and supplies.

Chain Machinery.—A. T. Stokes, Gadsden, Ala., wants addresses of manufacturers of machinery for making trace and other chains.

Cotton Mill.—L. B. Whatley, 118 High street, Portsmouth, Va., wants information and prices on machinery for making cotton batting.

Drainage Work.—Commissioners will open bids August 28 for improved drainage, to be done in accordance with plans and specifications. For information and forms address board of State engineers, New Orleans, or J. G. White, president, and J. R. Thornton, secretary, Alexandria, La.

Electrical Equipment.—M. R. McAdoo, general manager Pittsburg, McKeesport & Connelville Railway Co., No. 1001 Bank of Savings Building, Pittsburg, Pa., will open bids September 4 for furnishing power-house equipment, amounting to about 3000-kilowatt capacity, consisting of engines, generators, boilers, piping, transformers, rotaries, switchboards, etc. Plans and specifications may be obtained on request to Westinghouse, Church, Kerr & Co., No. 25 Cortlandt street, New York.

Electrical Equipment.—J. S. Sewell, captain engineers, 725 North Capitol street, Washington, D. C., will open bids September 9 for furnishing distributing centers for electric-lighting and power circuits for new Government Printing Office building.

Electrical Machinery.—See "Machine Tools."

Electrical Machinery.—Virginia Soapstone Co., Schuyler, Va., will be in the market for 180-kilowatt direct-current generator of railway type and two 75-horse-power motors and other apparatus.

Electrical Machinery.—W. H. Crawford & Co., 203 Union street, Nashville, Tenn., will be in the market soon for machinery to erect

5500-horse-power electrical plant to transmit power seventy-five miles.

Electric-light Plant.—W. T. Pitts, Indianola, Miss., wants prices on complete outfit for 1000-light electric plant, including insulators, lamps, etc.

Engine.—Alabama City, Gadsden & Attalla Railway Co., C. S. Ward, general manager, Gadsden, Ala., is in the market for a 250-horse-power compound engine.

Engine, Pump, etc.—E. A. Hitchcock, Secretary Interior Department, Washington, D. C., will open bids August 12 for furnishing two hot-water heaters, oil separator, feed-water heater, purifier, steam separator, feed pumps and centrifugal pump and engine. Drawings, etc., on application to chief clerk of department.

Excelsior Machinery.—See "Mattress Machinery."

Fertilizer Machinery.—New Berne (N. C.) Cotton Oil and Fertilizer Mills wants to correspond with manufacturers of machinery for small dry-making fertilizer plant.

Fire Equipment.—R. H. Sommerville, city treasurer, Montgomery, Ala., will open bids August 20 for fire-hose wagon. Usual rights reserved.

Gasoline.—Robert Balbi, Malta, wants prices on gasoline in one or five-gallon tins and drums.

Glass.—Conecuh Pine Lumber & Manufacturing Co., Montgomery, Ala., wants prices and discounts on window glass in carload lots delivered at Montgomery.

Grinding Machinery.—See "Paint Machinery."

Heating Apparatus.—W. E. Circle, Glen Wilton, Va., wants to correspond with manufacturers of steam-heating apparatus.

Heating Plant.—J. K. Taylor, supervising architect, Washington, D. C., will open bids August 19 for repairs to heating and steam plants in Treasury and Winder Buildings. Specifications, etc., on application.

Heating Plants.—See Berkeley, Va., under "Building Notes."

Hoisting Equipment.—Crab Orchard (Tenn.) Coal & Coke Co. is in the market for a new or second-hand hoisting engine for slope (500 yards long) varying in pitch from 30 to 45 degrees.

Hoisting Machinery.—See "Mining Equipment."

Ice and Cold-storage Plant.—Artesian Ice Co., Sherman, Texas, wants bids on machinery for a 50-ton ice and cold-storage plant; R. S. Dorchester, secretary.

Ice Plant.—E. B. Perkins, Paragould, Ark., is in the market for a 30-ton ice plant.

Ice Plant.—W. N. M. Grimmet, Merkel, Texas, wants prices on ice plant from three to ten tons capacity, exclusive of boiler and engine.

Ironworking Machinery.—See "Chain Machinery."

Knit Goods.—See "Textile Products."

Laundry.—J. N. Tuttle & Co., Perry, Ga., want bids on complete laundry, including steam boiler, engine, etc.

Machine Tools.—Vaughan & Fuller, Winchester, Tenn., wants lathes, shaper, etc., and about four or five-horse-power electrical motor.

Mattress Machinery.—Wesner & White Manufacturing Co., Cameron, S. C., wants catalogues and prices of spring-bed machinery and supplies, of mattress-making machinery, and of excelsior machinery.

Metallic Casing.—J. R. Culp, county supervisor, Chester, S. C., will open bids August 20 for metallic casings for installation in courthouse.

Mining Equipment.—Pharr Copper Mining Co., Anderson, S. C., is in the market for a small hoisting engine or an engine and boiler mounted on wheels, new or second-hand.

Oil Refinery.—New Berne (N. C.) Cotton Oil and Fertilizer Mills wants plans and prices on oil refinery with capacity of 2500 gallons per day.

Paint Machinery.—J. L. York, Bosticks Mills, N. C., is in the market for dry paint grinding machinery.

Power-house Equipment.—See "Electrical Equipment."

Power Plant, etc.—Clarence R. Edwards, chief insular affairs division, Washington, D. C., will open bids August 19 for furnishing machinery, etc., for power plant for proposed printing office at Manila, P. I. Printed schedules with full description and instructions furnished on application.

Roofing.—Southern Lampblack Works, Savannah, Ga., is in the market for 450 squares of roofing and siding, galvanized iron.

Sewerage System.—R. S. Adams, mayor, and aldermen, Oxford, Miss., will open bids

August 20 for construction of sewerage system after plans and specifications on file with mayor and at office of engineers, Schuerman & Brown, Nashville, Tenn. Certified check for \$500 to accompany each bid.

Shuttle Blocks.—Hobson & Craig Bros., Morristown, Tenn., want to correspond with dealers in shuttle blocks.

Spring-bed Machinery.—See "Mattress Machinery."

Textile Machinery.—R. L. Goodman, 611 Austell Building, Atlanta, Ga., wants addresses of manufacturers of machinery for making lace curtains.

Textile Products.—Robert Balbi, Malta, wants to communicate with manufacturers of cotton and woolen piece goods, hosiery, etc.

Water Supply.—See "Windmills."

Windmills.—Rev. Wm. Brayshaw, Valley Lee, Md., wants information and prices on windmill equipments for raising water.

Woodworking Machinery.—J. M. Cox, Valley Head, Ala., will buy heavy four-side inside molder for dressing timbers and making flooring and ceiling, new or second-hand, with capacity for dressing four sides, 12x24 and 15,000 to 25,000 per day.

Woodworking Machinery.—See "Barrel Machinery."

Woodworking Machinery.—John Pagan, Smallwood, S. C., is in the market for universal planer and matcher and other machinery for general woodwork, especially coffins and furniture.

TRADE LITERATURE.

Notable Features of Westinghouse Exhibits.—The Westinghouse Companies of Pittsburg extend cordial invitation to all interested parties to visit their exhibits at the Pan-American Exposition. A novel mailed folder, giving a complete map of the Buffalo Exposition, has been issued calling attention to the exhibits of the Neerast lamp, gas engines, electrical apparatus, engineering equipments, air brakes, signaling systems, etc.

Jeffrey Manufacturing Co.—Circular No. 63 of the Jeffrey Manufacturing Co. gives a general idea of the line of machinery manufactured by the Jeffrey Manufacturing Co. of Columbus, Ohio. Its contents are brief and to the point, accompanied with telling illustrations of some of the plants referred to. Coal and ore-handling equipments, specially designed if necessary, for every kind of industrial plant is produced by the Jeffrey works. Send for circular.

Buffalo Disk Wheels.—These wheels are the product of a demand for a simple yet effective means of ventilating, cooling and drying in numerous situations. The forms have been adopted only after exhaustive experimenting to determine the most efficient patterns. The well-known Buffalo (N. Y.) Forge Co. manufactures these wheels. It has just issued a neat illustrated booklet telling the facts concerning these wheels. Send for copy if you are interested in the subject.

Tanks, Towers and Tubes.—One of the principal factors in the success of the W. E. Caldwell Company has been its use of Louisiana cypress wood in the construction of its tanks and towers and the manufacture of all kinds and all sizes, and it is in demand all over this country, also in Canada, South America and elsewhere. The company has issued a new catalogue of its tanks, towers and tubes. Send for copy; office at Louisville, Ky.

Insuring Patterns.—Foundrymen and other industrial operators using patterns will be interested in a paper prepared by Frederick Conlin of Bethlehem, Pa. The subject of protecting foundry patterns by insurance is discussed in a complete and instructive manner by Mr. Conlin, and his position as manager of Bethlehem Foundry & Machine Co. gives authority to his ideas and statements. "Insuring Patterns" is the paper's title, and it is issued in the June number of the Journal of the American Foundryman's Association.

Out of the Usual Line.—This can well be said of the catalogue issued by the Franklin Machine Works of Philadelphia. The cover has a diagonal fold which is not only unique, but artistic. The title is printed in rich gilt letters, while the interior contains illustrations of the horizontal boring machines, milling machines and cutting-off machines so prominently associated with the name of Franklin. The engravings are of an unusually high order, and the typography and general arrangement of the pamphlet tasteful in the extreme.

Power Brake for Street Railways.—The necessity of using some form of power brake in connection with electric railway cars has long been apparent. Such a power brake is now offered by the Westinghouse Air Brake Co. of Pittsburg, Pa. The company's wide experience and success in the field of braking apparatus will give the new equipment ample opportunity for proving its merits. By a simple and ingenious combination of a magnetic track brake with a wheel brake of maximum power a braking effect greatly in excess of any heretofore attained is produced. This is the Westinghouse offering. In addition to the braking effect, cars equipped with the complete apparatus can be comfortably heated in winter without the use of line current, and consequently without cost. Send for illustrated publication telling about this equipment.

Boston & Maine.—Sparkling lakes are cheerful and soothing features of our country's landscape. In New England these lakes are very numerous and their presence adds to the picturesque and beautiful scenes abounding in that region. In the hot summer days vacationists seek either the life of the seashore, the mountains or the lakeside. The Boston & Maine Railroad caters to these, and its services are availed of by thousands of travelers every year. Just now is a busy time in New England regions, seekers after rest and recreation now forming a veritable army in their passage to the many beautiful places in the extensive New England playground. The Boston & Maine Messenger of August 1 contains illustration and talks concerning the localities mentioned. Ask the passenger department at Boston for a copy; it may assist you in planning an outing.

"Who Uses Mechanical Draft?"—Such is the title of a very effective publication issued by the B. F. Sturtevant Company of Boston. It is stated that the question is simplest answered "by the accompanying lists, incomplete though they are, for only the larger plants equipped by this company have been included. No record now exists of the uses made of a multitude of smaller fans sold during the past forty years. But the names here presented are sufficient to emphasize the very general substitution of mechanical draft for chimney draft in steam boiler practice. In stationary plants alone these lists represent an increase of over 250 per cent. since their first publication, a little over two years ago." Even limited as the lists are, they contain over 1000 names and most clearly indicate the extent of the work done by the Sturtevant Company in this, only one of the many branches of its extensive business.

Lidgerwood Exhibit at Pan-American.—Hoisting and conveying machinery has developed amazingly during recent years. Such equipments as are now offered by the manufacturers comprise about every design that industrial and manufacturing operations have suggested and made a demand for. The Lidgerwood Manufacturing Co. of 96 Liberty street, New York, has reached a most prominent position in the design and construction of the class of equipments referred to. This company has established an exhibit of its machinery at the Pan-American Exposition, but it is necessarily very incomplete, because of the limited space obtainable. The Lidgerwood apparatus is used all over the world, many special forms for special purposes having been installed. An illustrated booklet of the Lidgerwood exhibit at Buffalo has been issued. It is of interest to all present and prospective users of hoisting and conveying machinery of all kinds.

Ice Cold Storage.—Those interested in the subject of cold storage by means of ice should be acquainted with the facts as set forth in "Natural Ice Cold Storage and the Cooper Systems of Refrigeration." This has been published in pamphlet form, accompanied by diagram drawings. Its contents include reference to the application of ice to cold-storage purposes; the early patented systems, most of which have been abandoned; gravity brine-circulation system and indirect circulation; the circulation of air in cold rooms and their proper ventilation, etc. The greater portion of the pamphlet appeared as a series of paid contributions to the oldest paper in the ice and refrigerating trades, which should vouch for its usefulness. The results which may be attained by the use of ice, as illustrated and described, are fully equal, and in some respects superior, to those obtained by the use of refrigerating machinery. The author, Madison Cooper, is refrigerating engineer and architect at Minneapolis, Minn. He will send the pamphlet for twelve cents in stamps.

FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Banks and Prosperity.

The Daily Journal of Finance of New York regards the increase in the number of national banks in the South, referred to last week in the Manufacturers' Record, as an additional proof of the prosperity of the people of that section. It says:

"The capital of both the national and State banks that have recently been organized in the South has been very largely subscribed by citizens of the localities where these banks are to do business. The country in every section never before had so many banking facilities or such solid and such liberal banks.

"It has been evident for some years past that the banks and the people were getting closer together. The notion that the interests of the two are antagonistic is so absurd that the demagogues who have played upon it are now looking out for another string upon which to harp.

"The banks flourish best when all other interests thrive. They find more opportunities for safe loans, and their collections are more certain. General confidence enables them to use their own resources to better advantage. When the country prospers the banks prosper, and vice versa. Congress was wise in passing an act to encourage the organization of banks in the towns. It was easy enough under the old law to establish them in the great centers of population and capital, but it was difficult for the towns to obtain the advantages of local national banks."

New Corporations.

The Bank of Viola, in Warren county, Tennessee, has been chartered, with capital of \$10,000.

The Merchants and Farmers' Bank of New Louisville, Ark., has been incorporated, with capital stock of \$25,000.

A bank with capital of \$20,000, with Mr. W. N. Byers, president, and W. C. Adams, cashier, has been organized at South Pittsburg, Tenn.

The Kanawha Banking & Trust Co. of Charleston, W. Va., has applied for a charter. The incorporators are C. C. Lewis, Sr., Harrison B. Smith, Dr. L. Prichard, Enoch Carver, H. A. Robson and Fred M. Staunton, all of Charleston. The capital stock of the company is \$200,000, and its business will be that of general banking and the handling of estates and properties of all kinds.

New Securities.

Bids for \$40,000 of bonds of the city of Clarksburg, W. Va., will be received until August 21.

The Texas board of education has purchased \$30,000 of courthouse bonds of Crockett county for the school fund.

Sealed proposals will be received until August 20 for the purchase of \$20,000 of sewerage bonds for Oxford, Miss. Mr. R. S. Adams is mayor.

Sealed bids will be received by County Ordinary J. C. Johnson at Watkinsville for \$8500 of 4½ per cent. jail bonds of Oconee county, Georgia.

Financial Notes.

The directors of the Old Town Bank of Baltimore have decided to submit to the stockholders a proposition for the conversion of the bank into a national institution.

Two trust mortgages from the successor of the Maryland Brewing Co. to the Mercantile Trust & Deposit Co. to secure the issue of an aggregate of \$9,125,000 in 50-year gold bonds were filed this week at Baltimore. One is a first mortgage for \$5,625,000, bearing 3 per cent. interest the first two years and 4 per cent. thereafter; the other is a second income mortgage for \$3,500,000, bearing 5 per cent. interest and payable out of the income if earned.

George Austin Morrison, chairman; Harris C. Fahnestock, Edward Winslow and J. Kennedy Tod announce that they have consented to act as a committee representing the holders of a large amount of the preferred and common stocks of the American Cotton Oil Co., who have entered into an agreement for furthering a consolidation or other disposition of the property, or for the acquisition or lease of property by the company, and for the general advancement of the interests of depositing stockholders through united action, whereby their respective holdings shall be held and managed in bulk during the period of the agreement and better results secured than by individual action. Holders of preferred and common stock who have so far become parties to the agreement are offered an opportunity to participate in the benefits of it by depositing their stock with the First National Bank of New York on or before September 30, which will issue negotiable certificates for the stock. Copies of the stockholders' agreement may be obtained from R. F. Munro, secretary to the committee, at the office of the company.

SOUTHERN COTTON-MILL STOCKS.

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for Week Ending August 13.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.)	91	91
Aiken Mfg. Co. (S. C.)	90	93½
American Spinning Co. (S. C.)	103	103
Anderson Cotton Mills (S. C.)	129	129
Arkwright Mills (S. C.)	117	117
Augusta Factory (Ga.)	76½	76½
Avondale Mills (Ala.)	82½	82½
Belton Mills (S. C.)	101½	101½
Bennettsville Mfg. Co. (S. C.)	100	100
Cabarrus Cot. Mills (N. C.) new	120	130
Clifton Mfg. Co. (S. C.)	175	175
Clinton Cotton Mills (S. C.)	121	121
Courtenay Mfg. Co. (S. C.)	117	120
Dallas Mfg. Co. (Ala.)	90	100
Darlington Mfg. Co. (S. C.)	97½	97½
Eagle & Phenix Mills (Ga.)	100	100
Enoree Mfg. Co. (S. C.)	113	118
Enterprise Mfg. Co. (Ga.)	100½	100½
F. W. Poe Mfg. Co. (S. C.)	117	117
Gaffney Mfg. Co. (S. C.)	112	116
Granby Cotton Mills (S. C.)	100	100
Granby Cotton Mills (S. C.) 1st Pfd.	106	106
Granville Mfg. Co. (S. C.)	160	165½
Greenwood Cotton Mills (S. C.)	96½	100
Grendel Mills (S. C.)	100	103½
Henderson Cotton Mills (N. C.)	120	125
Henrietta Mills (N. C.)	200	200
John P. King Mfg. Co. (Ga.)	95	100½
Langley Mfg. Co. (S. C.)	110½	110½
Laurens Cotton Mills (S. C.)	135	145
Lockhart Mills (S. C.)	102½	107
Loray Mills (N. C.)	90	90
Louise Mills (N. C.)	100½	100½
Lynchburg Cotton Mills (Va.)	125	130
Lynchburg Cotton Mills (Va.) Pfd.	145	150
Manchester Cotton Mills (S. C.)	115	115
Mayo Mills (N. C.)	150	150
McColl Mfg. Co. (S. C.)	100½	100½
Newberry Cotton Mills (S. C.)	113½	113½
Orr Cotton Mills (S. C.)	102	102
Pacolet Mfg. Co. (S. C.)	200	200
Peizer Mfg. Co. (S. C.)	172	180
Piedmont Mfg. Co. (S. C.)	116	182
Raleigh Cotton Mills (N. C.)	116	116
Richland Cotton Mills (S. C.)	104	107
Richland Cotton Mills (S. C.) Pfd.	100	104
Roanoke Mills (N. C.)	90	90
Sibley Mfg. Co. (Ga.)	78	81
Southern Cotton Mills (N. C.)	96	100
Spartan Mills (S. C.)	130	138
Trion Mfg. Co. (Ga.)	125	135
Tucapau Mills (S. C.)	128	128
Union Cotton Mills (S. C.)	140	140
Union Cotton Mills (S. C.) Pfd.	100½	105
Victor Mfg. Co. (S. C.)	106	106
Warren Mfg. Co. (S. C.)	90	90
Warren Mfg. Co. (S. C.) Pfd.	104½	104½
Washington Mills (Va.)	100	100
Whitney Mfg. Co. (S. C.)	120	120
Wilmington Cot. Mills (N. C.) Pfd.	100	105
Wiscasset Mills (N. C.)	115	115

Electrical Supplies.—The Western Electrical Supply Co. of St. Louis has recently issued an electric fixture and supply catalogue No. 28. This catalogue covers a most complete and up-to-date line of fixtures, all illustrated on large half-tones. The company says it has recently enlarged facilities for handling the fixture business and that the factory is now in position to guarantee prompt shipments of anything the catalogue shows. Prospective buyers should examine this catalogue before placing contracts.

TABLE OF CONTENTS.

EDITORIAL:	Page.
One of the Helps.....	51
The South and Good Roads.....	51
Sent From the South.....	51
Its Future Its Own to Make.....	51
Fuel of the Future.....	51
An Industrial Monument.....	52
Fading of a Fad.....	52
In Huntsville's Vicinity.....	52
Economic Advantages of the South.....	52
Using Larger Pipes.....	52
Kentucky Oil Fields.....	52
Test of Oil for Fuel.....	52
May Pipe to Nashville.....	53
An Oil Handbook.....	53
Oil Notes.....	53
Shipbuilding at Mobile.....	54
Wideawake Hazlehurst.....	54
American Coal in 1900.....	54
Rebuilding Jacksonville.....	54
To Launch Three at Once.....	54
FOREIGN TRADE:	
Cattle Through Gulf Ports.....	54
New Orleans' Trade.....	55
Encroaching America.....	55
Sugar-Mill Shipment.....	55
Galveston's Increasing Exports.....	55
Notes.....	55
RAILROADS:	
Showing of the Southern.....	55
Improvements at Mobile.....	55
Another Georgia Project.....	55
No Immediate Extension.....	55
Through Fertile Mississippi.....	55
Another Trolley Plan.....	55
Improving a Bridge.....	55
Through Zinc Fields.....	55
Pushing to the Terminus.....	55
Railroad Notes.....	55
LUMBER:	
Lumber Market Reviews:	
Baltimore.....	56
Norfolk.....	56
Charleston.....	56
Savannah.....	56
Mobile.....	56
Memphis.....	56
Beaumont.....	57
Lumber Notes.....	57
MECHANICAL:	
Foss Manufacturing Co.'s Exhibit (Ill.).....	58
Hill Patent Steam Log Stop and Loader (Illustrated).....	58
The Control Over Temperature and Humidity in Cotton Mills.....	58
Improved Tube Expanders (Illus.).....	59
Exeter Pressure Blower (Illus.).....	59
The Jarecki Screening Machine (Illus.).....	59
TEXTILES:	
North Carolina Textile School.....	61
Rushton Cotton Mills.....	60
A \$6000 Knitting Plant.....	60
Another 6000 Spindles.....	60
Textile Notes.....	60
Quotations of Cotton Yarns.....	60
Cottonseed-Oil Notes.....	60
PHOSPHATES:	
Phosphate Markets.....	60
Phosphate and Fertilizer Notes.....	60
Trade Notes.....	61
Trade Literature.....	61, 65
CONSTRUCTION DEPARTMENT:	
New Enterprises.....	62
Building Notes.....	64
Railroad Construction.....	61
Machinery Wanted.....	65
FINANCIAL NEWS:	
Banks and Prosperity.....	65
New Corporations.....	65
New Securities.....	65
Financial Notes.....	65
Southern Cotton-Mill Stocks.....	65

Pancoast Improved Ventilator.—The importance of ventilation in all classes of buildings, especially those used as industrial establishments, is now generally recognized. Not only are the new structures equipped for proper ventilation, but also many of the plants and buildings in existence are being so equipped. The designing and manufacturing of ventilators have been given due consideration by specialists in that class of equipments. One of the best-known ventilators is that made by the Pancoast International Ventilator Co. of 223 South Fifth street, Philadelphia, Pa. The Improved Pancoast Ventilator is used in many countries, and its success continually gives it wider renown and results in many orders for the company named. This company has issued a new illustrated catalogue of its wares, and points with reasonable pride to the results that its specialty has given thousands of architects, contractors, owners and operators. The Pancoast is positively guaranteed to exhaust more air per minute than any other ventilator and to accomplish the results desired by the most exacting purchasers. Literature sent on application.

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SPECIAL

We are now sending out representatives (free of charge in New York City and at the cost of travelling expenses only outside of the City) for the purpose of inspecting in confidence the books of firms and corporations to be closed as of June 29. These inspections enable us to quote prices for annual or semi-annual audits of books and accounts.

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STOCKHOLDERS' COMMITTEE

The American Cotton Oil Co.

To the Holders of Preferred and Common Stock of the American Cotton Oil Co.:

Holders, to a large amount, of Preferred and Common Stock of the American Cotton Oil Co. have entered into a Stockholders' Agreement (dated July 22, 1901, and lodged with the Depositary) for the purpose of furthering a consolidation or other disposition of property of, or the acquisition or lease of property by, the American Cotton Oil Co., and for the advancement of the interests of depositing stockholders through unified action, whereby their respective holdings shall be held and managed in bulk during the period of the Agreement, and better results be secured than by individual action.

The undersigned have consented to act as a Committee under said Agreement, and hereby afford holders of the Preferred and Common Stock of the American Cotton Oil Co. the opportunity of participating in the benefits of said Agreement by the surrender depositing their stock with the First National Bank of the City of New York, as Depositary, on or before the 30th day of September, 1901.

Negotiable Certificates of Deposit will be issued for the deposited stock.

Copies of the said Stockholders' Agreement may be obtained from the Secretary of the Committee.

Dated New York, August 1, 1901.

GEORGE AUSTIN MORRISON,
Chairman,
HARRIS C. FAHNESTOCK,
EDWARD WINSTON,
J. KENNEDY TOD,
Stockholders' Committee.
SULLIVAN & CROMWELL, Counsel,
R. F. MUNRO, Secretary to Committee,
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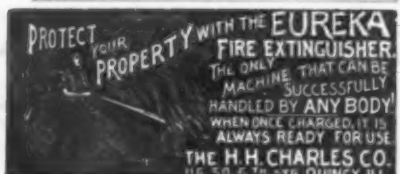


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PROPOSALS.

U. S. ENGINEER OFFICE, 166 Granby St., Norfolk, Va., August 5, 1901.—Sealed proposals for constructing sea wall at Fort Monroe, Va., will be received here until 12 M. September 6, 1901, and then publicly opened. Information on application.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., August 6, 1901.—Sealed proposals will be received at this office until 2 o'clock P. M. on the 31st day of September, 1901, and then opened, for the construction of Quarters for Detained Crews at the U. S. Quarantine Station, Cape Fear, N. C., in accordance with drawing and specification, copies of which may be had, at the discretion of the Supervising Architect, by applying to this office or to the Medical Officer in Command, at Southport, N. C. JAMES KNOX TAYLOR, Supervising Architect.

BIDS FOR NEW COURTHOUSE.

Bids for the new Courthouse at Carterville, Georgia, are wanted on September 17th, 1901, to be handed to L. B. Matthews, Chairman Board of County Commissioners, Bartow County, Georgia. Plans can be seen at the office of L. B. Matthews, Carterville, Georgia; Kenneth McDonald & J. F. Shebley, Architects, of Louisville, Ky., and J. W. Golucke & Co., Architects, Atlanta, Ga. For further information apply to either of the above named persons. L. B. MATTHEWS, Chairman.

CHESTER, S. C., August 7, 1901.

Bids for Metallic Casings for the preservation of Public Records in the Annex to our Court House will be received at this office until the 20th inst. at 10 o'clock, a. m. The right to reject all bids will be exercised by the board in case no satisfactory ones shall be made.

J. R. CULP, Supervisor, C. C., S. C.

Power House Equipment.

Bids for the Power House and Sub-Station equipments, amounting to about 3000 K. W. capacity, consisting of Engines, Generators, Boilers, Piping, Transformers, Rotaries, Switchboards, etc., for the Pittsburgh, McKeesport & Connellsville Railway Company, are requested.

Plans and specifications may be obtained by request at the office of Westinghouse, Church, Kerr & Company, Engineers, No. 26 Cortlandt Street, New York, on and after August 15th, 1901.

Bids must be addressed to M. R. McAdoo, General Manager, and must be submitted before noon on Wednesday, September 4th, 1901, at the office of the Railway Company, Room No. 1001, Bank for Savings Building, Pittsburgh, Pa.

Municipal Bonds. Sewerage System.

Sealed proposals will be received by the Board of Mayor and Aldermen of Oxford, Miss., until 5 P. M. Tuesday, August 20th, 1901.

First—for the Purchase of Sewerage Bonds to the amount of \$20,000.

Second—for the Construction of a System of Sewerage to plans and specifications on file at the office of the Mayor, Oxford, Miss., and at the office of the Engineers, Schuerman & Brown, Nashville, Tenn.

Each proposal for the construction of the Sewerage System shall be accompanied by a certified check to the amount of \$500, payable to the order of the Board of Mayor and Aldermen of Oxford, Miss., as a guarantee that the contract will be entered into if awarded.

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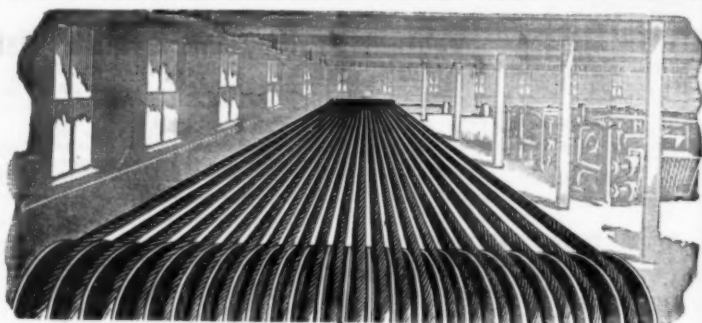
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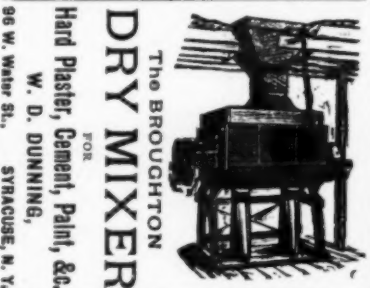
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Pages 3, 5, 7, 9, 11, 13, 15
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A	Abrasive Material Co.	37	Brubaker, W. L., & Bros.	37	Dopp, H. Wm., & Son.	14	Howell's Mining & Drill Co.	39	Milliet Core Oven Co.	31	Scranton Cor. & Rm'v Wheel Co.	3	
Acme Steel & Mal. Iron Wks.	53	Bryan, Andrew J., & Co.	6	Dow Wire Works Co.	10	Dow Wire Works Co.	10	Hughes Specialty Well Drill Co.	40	Miller & Kettig Co.	49	Securities Guaranty Co.	2
Active	31	Buckeye Iron & Brass Works	48	Downman Mfg. Co.	10	Downman Mfg. Co.	10	Humboldt Metal Works.	21	Milton Mfg. Co.	49	Seiler Bros. Co.	3
Adams, Henry	6	Buckingham & Paulson	26	Downie Pump Co.	61	Downie Pump Co.	61	Hunt, C. W., Co.	28	Mobile Coal Co.	8	Shimer, Saml. J., & Sons	3
Adams, J. M.	11	Buffalo Forge Co.	56	Draper Co.	46	Draper Co.	46	Huther Bros.	1	Monitor Steam Generator Mfg. Co.	18	Shultz Belting Co.	5
Adams Laundry Machinery Co.	2	Builders' Iron Foundry.	1	Du Bois Iron Works.	44	Du Bois Iron Works.	44	Hutton Engineering Co.	6	Montrous Metal Shingle Co.	15	Sieglist Lubricator Co.	1
Adams, R. S.	28	Bunnell, J. H., & Co.	54	Dufur & Co.	10	Dufur & Co.	10	Hyde Bros. & Co.	35	Moore, H. C.	54	Simmons, John, Co.	5
Affleck, Geo. E.	1	Bunnell Machinery Co.	40	Dunning, W. D.	28	Dunning, W. D.	28	Imperial Gas Lamp Co.	*	Morris, Harry	4	Simpson, A. Duncan	4
Aitchison, Robt., Perf. Met. Co.	40	Burger Iron & Wire Works	10	Dupont Mfg. Co.	*	Dupont Mfg. Co.	*	Incanadent Electric Light Ma-	*	Morse, William & Co.	12	Situation Wanted	3
Alabama Con. Coal & Iron Co.	54	Burnam Grate Co.	47	Dyson, Joseph, & Sons	37	Dyson, Joseph, & Sons	37	nipulator Co.	54, 55	Mottu, DeWitt, & Co.	27	Skinner Chuck Co.	5
Alabama Iron Works.	3	Burrowes, E. T., Co.	3	E				India Alkali Works.	47	Mueller, H. Mfg. Co.	42	Smithurst & Allen	5
Alber & Bryne.	6	Burt Mfg. Co.	3	Eastern Granite Roofing Co.	*	Eastern Granite Roofing Co.	*	Industrial Water Co.	47	Munsell, H. Mfg. Co.	42	Smith, F. L., Co.	4
Alber-Clem Elevator Co.	53	Bushnell, G. M., Press Co.	47	Easton, Robert	*	Easton, Robert	*	Ingersoll-Sergeant Drill Co.	36	Munson, Charles, Belting Co.	24	Smith, H. B., Machine Co.	10
Alcott, T. C., & Sons	51	Bushong, M. H.	41	Eaton & Prince Co.	62	Eaton & Prince Co.	62	Ingoldaby Automatic Car Co.	13	Muralo Co.	43	Smith, Samuel J., & Co.	5
Alexander Bros.	25	Byers, John F., Machine Co.	21	Eckhold's, Wm., Sons	33	Eckhold's, Wm., Sons	33	International Boiler Comp'd Co.	19	Murphy, John, Co.	56	Smith, S. Morgan, Co.	5
Alexander, S. B., Jr., Co.	54	C		Eclipse Machine & Boiler Wks.	34	Eclipse Machine & Boiler Wks.	34	International Corres. Schools.	6	Murray Iron Works	16	Smith-Warren Co.	4
Allington & Curtis Mfg. Co.	56	C. A. B.	30	Edson Mfg. Co.	51	Edson Mfg. Co.	51	International Power Co.	14	Muzzy Bros.	43	Smythe, S. R., Co.	5
Alphas Photo-Engraving Co.	58	Caldwell H. W., & Son Co.	4	Ellington Mfg. Co.	16	Ellington Mfg. Co.	16	International Sprinkler Co.	1	Myers, F. E., & Bro.	50	Southern Lime & Cement Co.	3
Alphas Portland Cement Co.	8	Caldwell, W. E., Co.	49	Erikson, Edward E.	6	Erikson, Edward E.	6	International Trust Co.	27	N		Southern Engine & Boiler Wks.	1
Alsing, J. R., Co.	38	Cameron, A. S., S. Pump Wks.	50	Etting, Edward J.	28	Etting, Edward J.	28	International Roofing & Supply Co.	41	Nashville Chattanooga &	30	Southern Engine & Boiler Wks.	1
American	49	Cameron & Barkley Co.	32	Eureka Fire Hose Co.	24	Eureka Fire Hose Co.	24	Nat'l Skylight & Construction Co.	42	National Pipe Bending Co.	19	Southern Engine & Boiler Wks.	1
American Arithmometer Co.	9	Camp Engineering Co.	32	Eureka Iron Co.	20	Eureka Iron Co.	20	New Atlantic Automatic Weigh-	31	National Roofing & Supply Co.	41	Southern Engine & Boiler Wks.	1
American Blower Co.	17	Campbell & Clute	1	Eureka Supply Co.	10	Eureka Supply Co.	10	ing Machine Co.	47	Nat'l Skylight & Construction Co.	42	Southern Engine & Boiler Wks.	1
American Bridge Co.	1	Carbondale Chemical Co.	22	Excelsior Knitting Mch. Mfg. Co.	47	Excelsior Knitting Mch. Mfg. Co.	47	New England Automatic Weigh-	31	New England Automatic Weigh-	31	Southern Engine & Boiler Wks.	1
American Cement Co.	8	Carborundum Co.	37	Exeter Machine Works.	21	Exeter Machine Works.	21	Dry Dock Co.	22	Newport News Shipbuilding &	41	Southern Engine & Boiler Wks.	1
American Cotton Oil Co.	28	Cardwell Machine Co.	47	Exeter Machine Works.	22	Exeter Machine Works.	22	New York Continental	10	Newport News Shipbuilding &	41	Southern Engine & Boiler Wks.	1
American Diam'd Rock Drill Co.	39	Carlin Machinery & Supply Co.	35	F				Filtration Co.	2	New York Continental	10	Southern Engine & Boiler Wks.	1
American Electric Fuse Co.	54	Carnell, George	40	Fairbanks Co.	16	Fairbanks Co.	16	New York Equipment Co.	25	New York Continental	10	Southern Engine & Boiler Wks.	1
American Spiral Pipe Works.	51	Carolina Fire Brick Works.	7	Fairmount Machine Co.	46	Fairmount Machine Co.	46	Niagara Mach. & Tool Works	36	New York Equipment Co.	25	Southern Engine & Boiler Wks.	1
American Steam Gauge & Valve	20	Carolina Portland Cement Co.	3	Farquhar, A. B., Co., Limited.	18	Farquhar, A. B., Co., Limited.	18	Nichols, L. T.	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
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American Steel Hoop Co.	5	Carpenter, George B., & Co.	62	Fayerweather & Ladew, Inc.	24	Fayerweather & Ladew, Inc.	24	N. J. Zinc Co.	43	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
American Supply Co.	36	Carver Cotton Gin Co.		Felton, S. A., & Son Co.	34	Felton, S. A., & Son Co.	34	N. Orleans News Preserving Wks	41	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
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Andrews, Perry, & Bro.	49	Casey, D. L., Machine Co.	32	Fitz-Hugh & Co.	54	Fitz-Hugh & Co.	54	New York Continental	10	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Arctic Machine Co.	23	Caster, Curran & Bullitt.	64	Fitzsimmons, A. N.	9	Fitzsimmons, A. N.	9	New York Equipment Co.	25	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Armstrong Mfg. Co.	23	C. & B. Line	1	Flint & Walling Mfg. Co.	61	Flint & Walling Mfg. Co.	61	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Armstrong, R. S., & Bro.	34	Cedartown Co.	31	Florida Iron & Wood Works	4	Florida Iron & Wood Works	4	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Asher, A.	35	Champion Machine Co.	46	Flower, Walter, L., & Co.	20	Flower, Walter, L., & Co.	20	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Asphalt Ready Roofing Co.	42	Chandless Fence Co.	10	Fox Mfg. Co.	28	Fox Mfg. Co.	28	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Associated Expanded Metal Co.	41	Chapman, W. A., & Co.	6	Fox, M. Ewing, & Co.	*	Fox, M. Ewing, & Co.	*	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Atherton Machine Co., The A. T.	48	Charles, H. H., Co.	28	Frank Machinery Co.	45	Frank Machinery Co.	45	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Atkins, E. C., & Co.	45	Charlotte Roof & Paving Co.	42	Frantz-Gage Mfg. Co.	49	Frantz-Gage Mfg. Co.	49	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Atlantic Cement Co.	49	Chase Pulley Co.	45	Freese, E. M., & Co.	40	Freese, E. M., & Co.	40	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Atlas Engine Works.	16	Chattanooga Machinery Co.	45	French, A., Spring Co.	12	French, A., Spring Co.	12	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Atlas Pipe Wrench Co.	50	Chattanooga Paint Co.	41	French, Sam'l. H., & Co.	*	French, Sam'l. H., & Co.	*	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
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Austin, F. C., Mfg. Co.	38	Chicago Chicago Wrecking Co.	33	G				Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Austin Separator Co.	23	Chicago Knife Works	45	Galena Oil Co.	36	Galena Oil Co.	36	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
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Badger, E. B., & Sons Co.	41	Clayton Air Compressor Works	3	Garrett, C. S., & Son	19	Garrett, C. S., & Son	19	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Badger, E. B., & Sons Co.	41	Cleveland Belting & Mch'y. Co.	33	Gem City Boiler Co.	19	Gem City Boiler Co.	19	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
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Badger, E. B., & Sons Co.	41	Cochran Co.	22	General Electric Co.	55	General Electric Co.	55	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
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Badger, E. B., & Sons Co.	41	Columbus Machinery Co.	47	General Electric Co.	55	General Electric Co.	55	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Badger, E. B., & Sons Co.	41	Commercial Electric Co.	54	General Electric Co.	55	General Electric Co.	55	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Badger, E. B., & Sons Co.	41	Conard, J. E.	30	General Electric Co.	55	General Electric Co.	55	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Badger, E. B., & Sons Co.	41	Conard, Thos. P.	32	General Electric Co.	55	General Electric Co.	55	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Badger, E. B., & Sons Co.	41	Concub Pine Lum. & Mfg. Co.	31	General Electric Co.	55	General Electric Co.	55	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Badger, E. B., & Sons Co.	41	Connor, W. D.	30	General Electric Co.	55	General Electric Co.	55	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
Badger, E. B., & Sons Co.	41	Continental Trust Co.	27	General Electric Co.	55	General Electric Co.	55	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
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Badger, E. B., & Sons Co.	41	Cornell, J. B., & J. M.	52	General Electric Co.	55	General Electric Co.	55	Niagara Mach. & Tool Works	36	Niagara Mach. & Tool Works	36	Southern Engine & Boiler Wks.	1
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5.....	6.75.....	13.00.....	19.00.....	25.00.....
6.....	8.00.....	15.00.....	21.50.....	28.00.....
1/4 page (13 in.)	16.00.....	30.00.....	40.00.....	50.00.....

Coal, Iron and Timber Lands.

Come to West Virginia.

Why? It has more and a greater variety of undeveloped resources close to Eastern and Western markets than any other State. The WEST VIRGINIA CENTRAL & PITTSBURGH RAILWAY penetrates the heart of the virgin timber forests and coal deposits. Cheap fuel, cheap raw material and unsurpassed railway facilities make that territory most desirable for manufacturing industries. For information in regard to timber and coal lands and manufacturing sites address

HOWARD SUTHERLAND,
Gen'l Land Agent, ELKINS, W. VA.

TEXAS PINE LANDS.

2468 Acres of Pine Land in the Pate League, Polk County, Texas. Located about five miles N. W. of Livingston, the county seat. Estimated to cut 5000 to 6000 feet per acre. In direct line between Beaumont and Corsicana oil fields. Oil well now being drilled near Livingston. Price \$4.00 per acre, or \$3.00 per acre reserving mineral and oil rights.

FRANK KNOX, Tyler, Texas.

For Sale—From 3000 to 3500 Acres of

TIMBER LAND

situated in Georgia, Orangeburg Co., S. C., near the South Carolina Road. About half of the tract is adapted for planting purposes, cotton, rice, corn, potatoes, sugar cane and tobacco, balance standing timber, with easy reach of Branchville and Bormantown. Apply to

W. D. CONNOR, St. Georges, S. C.
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FLORIDA TIMBER.

40,000 acres saw mill timber, average 2,000 feet per acre. Lies along the Seaboard Air Line Railway. Easy logging, low freight rates to Gulf and Atlantic Port. Price \$1.25 per acre, includes land, contains considerable cypress.

Send for prospectus.

BROBSTON, FENDIG & CO.,
BRUNSWICK, GA.

Fine Tract of Hardwood Timber Land.

20,000 Acres in St. Francis and Crittenden Counties, Ark., within 18 miles from the City of Memphis, on the Choctaw, Oklahoma & Gulf Railroad. Fine land, superior timber, both water and rail transportation. A bargain. Write for maps, estimates and information.

Marianna Land & Timber Co.
MARIANNA, ARK.

FOR SALE.

In Eastern North Carolina, 20,000 Acres Pine Timbered Lands, with complete modern saw mill plant and logging outfit, with all improvements. Fine timber, fertile lands, splendid hunting and fishing. Easy payments. Apply C. A. B., care Mfrs. Record.

Timber, Coal and Mineral Lands

FOR SALE.

Developed and Undeveloped. Any size or location. Bargains in Southern Properties. Correspondence solicited.

Samuel Bordenkircher,
76 Hillside Avenue, CLEVELAND, OHIO.

FOR SALE—TIMBER LANDS.—13,000 acres in Mississippi on Pearl River, 4 to 10 miles from I. C. Railroad. Fine white oak, pine, cypress, red oak, red gum, hickory, etc. Write for particulars. JOEL F. JOHNSON, Madison Sta., Miss.

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Expert advice on equipping and starting a mill on Union and Linen Towels will be given by a manufacturer who has been producing Union Towels in this country for the past four years. Correspondence solicited. Address

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Water Powers and Mill Sites.

ROANOKE NAVIGATION & WATER POWER CO. Weldon, North Carolina.

LESSORS OF
Water Power and Electric Power.
Unrivalled location for
INDUSTRIAL ENTERPRISES

at Junction of Atlantic Coast Line and Seaboard Air Line Railway Systems.
Steamboat connection with Norfolk, Va.
12 hours' travel from New York City.
Operates Nine Miles of Canals and Electric Power Transmission Plants.

Price for Water Power:
\$15.00 Per H. P. Per Year,
24 Hours' Use Daily.

THIS INCLUDES BUILDING SITE.
Electrical Power;
\$15.00 PER H. P. PER YEAR,
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OTHER INCITEMENTS:
Proximity to Raw Material and Market Centres.
Favorable Rates for Manufactured Products.
Free Building Sites.
Low Taxes, Exemptions, etc., etc.
Correspondence Solicited.

JAS. W. WILSON, President.

Magnificent Site for Pulp Mill, &c.
On Seaboard Air Line and river navigable 40 miles for light draft boats into a timber country untouched by railroads. Over 200 horse power available.

To the Manufacturer:

No sites for Cotton and Woolen Mills are more attractive or valuable than those to be found on the

Nashville, Chattanooga & St. Louis Railway.

The water powers are superb; coal for fuel convenient and low in price; the cotton fields almost within sight and sound of the water powers, with low rates on cotton from the various cotton markets to the mill sites (ask for tariffs) and the labor abundant, efficient and cheap. No more healthful region exists in the United States than that penetrated by the system of the Nashville, Chattanooga & St. Louis Railway. The water powers occur on numerous streams on the Huntsville & Sparta Division and on the Western & Atlantic Railroad, and range in dynamic force from 500 to 12,000 horse powers.

The prices of steam coal at the mills vary from \$1.00 to \$1.75 per ton. Labor is 25 per ct. cheaper than in the rigorous climate of the North, and domestic and foreign, at rates as favorable as those accorded to other manufacturing districts in the United States. For descriptive pamphlets, maps, rates, etc., call on or address

J. B. KILLEBREW,
Industrial and Immigration Agent,
NASHVILLE, TENN.

WATER POWERS

FOR SALE.
11,700 H. P. net, delivered electrically, Camden, S. C., where all trunk lines in South. \$30.00 per H. P. will buy and develop. H. P. rental asked for will pay 6 per cent. on total investment.

S. LOGAN LANG, Camden, S. C.

Miscellaneous Properties and Investment Opportunities.

FOR SALE.

A RUNNING PLANT,
consisting of Planing Mill, Sash, Door and Blind Factory, located in a thriving city on Jersey Coast within short distance of New York. Plenty of business can be had, but offered for sale in order to settle an estate.

VANDERBILT & HOPKINS,
126 Liberty St., New York City.

By J. E. CONANT & CO., Auctioneers, OFFICE, LOWELL, MASS.

It is the unanimous judgment of the Trustees in Bankruptcy that they immediately advertise and sell at **ABSOLUTE AUCTION SALE** the completely equipped plants, together with the tenement property, of the **PROSPECT WORSTED MILLS** and of the **GLOBE WORSTED MILLS** (widely and favorably known for the manufacture of worsted yarns), **LAWRENCE, MASS.** The plants, which are located in different sections of the city, are to be sold in two separate parcels, the sale to take place upon the respective premises regardless of any condition of the weather; to be without limit or reserve to the highest bona fide bidders; to begin promptly at half-past 2 o'clock in the afternoon with the Prospect Mills, following at 3.45 o'clock with the Globe Mills, and finishing at 4.15 o'clock with the tenement property adjacent to the Globe Mills, Thursday, the 22d day of August, 1901.

PROSPECT WORSTED MILLS.

(South Side of City.)

The business was originated by Butler & Robinson in 1863, on north canal of Essex Company. In 1879 was moved to south canal of Essex Company or the plant we now offer. The business, which was incorporated in 1892, and capitalised for \$150,000, as Prospect Worsted Mills, has proved very prosperous and successful. Its present financial strait was caused by endorsements for another corporation. The plant is modern; the real estate and machinery good; the equipment ample; the plant has run continuously and without interruption from 1879 up to day of assignment. A very recent appraisal of this plant, made by William D. Hartshorne, agent Arlington Mills, Lawrence, Mass.; William H. H. Whiting, assistant secretary Arkwright Mutual Fire Insurance Co., vice-president Paper Mill Mutual Insurance Co., appraiser and adjuster of mill properties, Boston, Mass.; Charles H. Littlefield, civil engineer and appraiser and eight years chairman board of assessors, Lawrence, Mass., was, less stock in trade and cash in bank, \$123,850.47. (A copy of appraisal in detail appears in catalogue of sale.) Now it is to be sold for just what is bid for it. The property is splendidly situated in best worsted labor district in America, on south bank Merrimack river, in a nest of active, varied and modern industries of good repute, all in successful operation; has perfect railroad facilities and connections with western division of B. & M. R. R. system; perpetual right to the use of 150 horse-power from canal at fixed charge of \$3000 per year; also ample chance to get all necessary added power required at very reasonable rates. Land has frontage of 200 feet on river, 300 feet on railroad and street; is 250 feet deep. Buildings: Brick buildings—Main mill, 58x124 feet, four stories and gravel roof; one-story ell, 35x130 feet; one-story ell, 27x60 feet; office building, 20x32 feet, one and one-half stories, with basement; ells, 14x20 feet and 10x11 1/2 feet. Wooden buildings—Sorting-room, 27x111 feet; three storehouses, 25x66, 18x17 and 25x40 feet; stable, 22x32 feet; engine-house, 13x76 feet; power elevator tower from ground to roof of mill, 10x10 feet; sheds, etc. Capacity, 8000 pounds 2-ply 40's worsted yarn per week. Power from canal through five-foot iron penstock to pair of McCormick improved horizontal wheels. Auxiliary steam plant: Green improved 75-horse-power Providence Engine Co. engine, two 75-horse-power boilers, etc. The plant is a going concern and the reputation of its product is first-class.

GLOBE WORSTED MILLS.

(North Side of City.)

This plant was incorporated in 1890, with a capital of \$30,000; about 1892 it was raised to \$90,000. The property is on the Spicket river; the Everett Mills are opposite the premises. Capacity of plant is upwards of 6000 pounds of 2-ply 32's or 36's worsted yarn per week. Under proper management it will be as successful and prosperous as any mill of its kind in the country; it owns its own water-power, dam and canal. This is a valuable acquisition; the same water and the same stream from which the Methuen Mills and Arlington Mills derive their water-power; is excellent water for steam and scouring. The real estate and machinery are good; the equipment is complete; the premises are electrically lighted; spinning and twisting rooms are supplied with Drosophore system; new 27-inch horizontal McCormick improved wheel added within a year; dam has been reconstructed and raised in same time; steam plant consists of a 75 horse-power Green's improved Providence Engine Co. engine, two 75-horse-power boilers, etc. The land runs about 740 feet along river front, about 219 feet on Allen street; total area, 75,000 square feet. Buildings: Brick buildings—Mill, 40x176 feet, two stories, gravel roof, with exception of westerly end, which is two and one-half stories, with basement, and slated roof; one-story ell, 28x30 feet; one-story wing, 13x40 feet. Wooden buildings—Engine-house, 12x40 feet; office building, 13x36 feet, one and one-half stories; one-story storing and sorting room, 34x40 feet; two-story machine shop and scouring-room, 34x50 feet; one-story drying-room, 1250 square feet floor area; stable, 17x33 feet. Water-power: In a letter relating to the water-power at Globe Mills, all of which appears in catalogue, from Richard A. Hale, principal assistant engineer Essex Company, Lawrence, dated June 15, 1901, to the Trustees, he makes the following estimate of power:

	Cubic feet	Net horse-power
27-inch McCormick wheel.....	46.2	41.9
39-inch Hercules wheel.....	82.0	74.3

Totals.....128.2 116.2
The appraisal of this plant by the same experts at about the same time of the Prospect appraisal was \$57,747. (This amount does not include stock in trade or cash in bank. Neither does it include seven parcels of tenement property, a part of the plant to be sold separately.) And, like the Prospect Mills, is to be sold absolutely without limit or reserve to the highest bidder. A copy of the appraisal in detail appears in catalogue of sale. Most of the help employed in the Globe Mills live in the immediate neighborhood and are skilled in the work of making worsted yarns.

Since the assignment, last December, both properties have received the best of care and attention; the cards have been turned over every day. The premises will be open for inspection after Thursday, August 15. The Trustees are convinced that former owners are not bidders. The purchaser of either plant can turn out yarn within forty-eight hours of the hour raw material goes into the mill.

The purchaser of the Prospect Worsted Mills must deposit with or secure to the auctioneers \$10,000 as soon as the property is struck off.

The purchaser of the Globe Worsted Mills must deposit with or secure to the auctioneers \$5000 as soon as the property is struck off.

The Trustees have arranged that 50 per cent. of the purchase money, on either plant, may remain on mortgage for a term of one year, with interest at a rate not to exceed 4 1/2 per cent. per annum. The deeds to be taken in thirty days, and purchasers to pay the taxes for the current year. All inquiries by mail, telephone or otherwise must be made at the office of the Auctioneers, where you should send for an illustrated catalogue of the property.

HENRY K. WEBSTER,
CHARLES W. WALWORTH,
WM. S. KNOX,
Trustees in Bankruptcy.

West Pascagoula Creosote Works,

WEST PASCAGOULA, MISS.

Situated on Pascagoula Bay and on the line of the Louisville & Nashville Railroad.

These works have been in operation for more than twenty years, were recently entirely rebuilt and enlarged, and are now prepared to execute all orders for Creosoted Piles and Timber thoroughly impregnated with dead oil of coal tar.

New cylinders 115 feet long. Capacity one million feet per month. Address

S. W. LABROT,

Supt. West Pascagoula Creosote Works,
WEST PASCAGOULA, MISS.

J. P. HORNADAY,

Financial Agent & Corporation Counsel.

Southern Timber and Mineral Lands.
Industrial Properties & Investments.
Corporations Organized and Financed.

Hotel Emery, Cincinnati, O.

SOUTHERN INVESTMENTS.

Additional Capital Supplied.
Stock Companies Organized and Attractive Properties Financed.
Make a Specialty of Mining, Timber and Industrial Propositions.

Bank references furnished.

R. E. WATSON, Austell Building, ATLANTA, GA.

WANTED.

A middle aged Ar business man as **Manager of a Large Fertilizing Plant about to be erected in the South.** Must have had experience in the manufacture of fertilizer and fully understand the manufacturing of fertilizer, and have the cash to invest \$1000 in the common stock of the company, and be able to give a guarantee indemnity bond in the sum of \$20,000, which the company will pay for. Salary for the first year \$5000. Give age and references. Enclose stamp for reply.

Address **STANDARD,**
Commercial Club Building, 21st St.,
BIRMINGHAM, ALA.

WANTED.

Practical, Experienced General Manager, who will invest from \$1,500 to \$2,500 in Spoke and Handle Factory to be built at excellent location in Alabama. Address **SPOKE AND HANDLE,** Room 617 Prudential Bld'g, Atlanta, Ga.

FOR SALE.

BOILER WORKS,
fully equipped with all modern machinery. Business established. Location perfect. Good reasons for selling out at once.
Only those meaning business need apply.

LEE BROTHERS,
MEMPHIS, TENN.

WANTED!

Business man established in Philadelphia, having large and influential connections, desires correspondence of Manufacturers, Miners, Iron and Steel Works, or others who can make use of his services. Will undertake any legitimate profitable enterprise, act as sales agent, etc. Address ACTIVE, care of Manufacturers' Record.

FOR SALE.

For Sale—A Large Manufacturing Plant, consisting of foundry, machine shop, carpenter, saw and tinmith shops, large warehouse, railroad siding, two dwelling houses, stable and other buildings, located on the Philadelphia & Reading Railway, 11 miles east from Reading, 25 miles west from Allentown. Working departments equipped with numerous patterns, tools and machines for manufacturing agricultural implements, wagons, stationary engines, etc. For further information, terms, etc., address H. F. L. RUMMEL, Reading, Pa.

Asbestos Property

FOR SALE.

L. T. NICHOLS, Chester, S. C.

WANTED.

Lowest list prices and best discounts allowed wholesalers on window glass in car lots delivered here. CONEUGH PINE LUMBER & MFG. CO., MONTGOMERY, ALA.

SITUATIONS WANTED.

Advertisements under this head will be inserted at the rate of one cent a word for each insertion.

A PRACTICAL REFINER of wide experience in the refining of Cotton-Seed Oil is open for a position. Address REFINER, care Manufacturers' Record.

WANTED.—By overseer of weaving, plain or fancy. Experienced designer. Address OVERSEER, care Mfrs. Record.

ANALYTICAL CHEMIST AND ASSAYER of wide experience in engineering, chemistry and assaying, is open for position. Address ASSAY, care Mfrs. Record.

HELP WANTED.

Advertisements under this head will be inserted at the rate of one cent a word for each insertion.

AGENTS WANTED.—We want agents to sell on commission to ginners throughout the South our Plantation Cotton Seed Hullers and Separators. A paying contract with control of territory will be given the right party. Address, with reference, PERRYMAN & CO., Birmingham, Ala.

WANTED.—A Superintendent for our Rock Salt Mines at Weeks Island, La. Must be familiar with rock salt business and capable of designing a rock salt mill. Write, giving reference and state experience. MYLES SALT CO., Ltd., New Orleans, La.

BOSTON & MAINE RAILROAD.

Lowest Rates.

Fast Train Service

BETWEEN

Boston and Chicago

St. Louis, St. Paul, Minneapolis and all points West, Northwest, Southwest.

Pullman Parlor or Sleeping Cars on All Through Trains.

For tickets and information apply at any principal ticket office of the Company.

D. J. FLANDERS,
Gen'l Pass. & Tkt. Agt.,
BOSTON.

Towns Wanting Factories.

Would

POWER

At a fuel cost of

\$5.00 Per Year

per ten-hour horse-power, be any attraction to you?

Wheeling, West Va.

can do even better than that. For particulars, ask the

Wheeling Board of Trade,

S. A. THOMPSON, Sec'y.

WHAT IS YOUR BUSINESS
ARE YOU PROFITABLY LOCATED
WOULD YOU DO BETTER ?

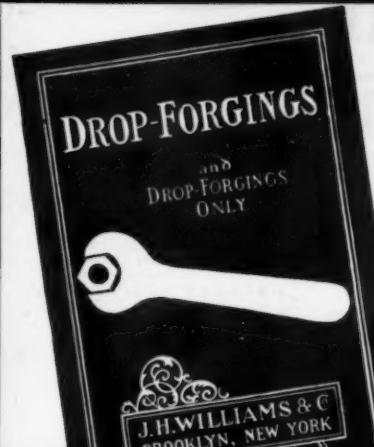
Then let us tell you about one of the most attractive and growing towns of the South,

"Cedartown, Ga."

Situated in the healthy "Piedmont Region," offers unexcelled opportunities for profitable business openings of all sorts, viz. STORES, COTTON AND KNITTING MILLS, STOVE WORKS, MACHINE SHOPS, BASKET FACTORIES, AGRICULTURAL IMPLEMENT WORKS, ETC., ETC.

CEDARTOWN has Water Works, Electric Light Plant and Underground Sewerage, Churches of All Denominations and Good Public Schools. Write for further information regarding CEDARTOWN'S industrial development.

CEDARTOWN CO., 119 S. 4th Street, PHILADELPHIA, PA.



BY far the most important book we ever have made is ready; sixteen lines of new tools and parts and thirteen additions to established ones. It has "business" value. Call it "Wrench Book G"

J. H. Williams & Co.
BROOKLYN, N. Y.



Millett's Patent Portable Core Oven

All complete and ready to put the fire in.

No one who makes small cores can afford to be without it.

DOUBLE DOORS, One closing the oven when the other is open.

Saves Fuel. Saves Time.

SEND FOR CIRCULAR.

Millett Core Oven Co., BRIGHTWOOD, MASS.

R. S. DODSON, Proprietor.

R. A. DODSON, Manager.

New Atlantic Hotel.

Rates, \$2.50 to \$4.00.

NORFOLK, VA.

Advertise in the Manufacturers' Record.

Woodworking PLANTS

WANTED

At a number of points in the South along the line of the

Southern Railway.

There are good openings for Woodworking Plants, such as FURNITURE FACTORIES, PLANING MILLS, SPOKE AND HANDLE FACTORIES, or other plants using pine or hardwoods. Local people will invest from \$6,000 to \$8,000 with an experienced man who will himself invest a like amount or more and do a legitimate business. For information write to

M. V. RICHARDS,

Land & Industrial Agent,

Washington, D. C.

SOUTHERN RAILWAY.

Bargains in Machinery

FOR IMMEDIATE DELIVERY.

Woodworking Machines

- 1 26" Woods Double Surfer.
- 1 7" four-side Moulder.
- 1 Houston Upright Mortiser.
- 1 34" Clement Band Saw.
- 1 Colladay Jig Saw.
- 1 Single Spindle Shapers.
- 2 Wood Lathes.
- 4 Saw Tables, rip and cross cut.
- 1 Hand Matcher.

ATTRACTIVE PRICES.

THOMAS P. CONARD,
119 S. Fourth St. PHILADELPHIA, PA.

FOR SALE.

SECOND-HAND WOOD-WORKING MACHINERY.

- 14" Keystone Matcher.
 - 14" Preble Matcher.
 - 4x6 Weatherby, Rug & Richardson; 2x6 Hoyt Bros.; 8" S. A. Wood Fast Feed Matcher.
 - 7x12 Endless Bed Surfer, S. A. Woods.
 - 4x6 J. A. Fay Incline Bed Cabinet.
 - 12" Inside Woods Moulder.
 - 10, 8, 6 and 4" Outside Moulders, all makes.
 - Greenlee Self Feed Saw, Saw Tables.
 - 8 Rawley & Hermance Re-saw.
 - 14 H. B. Smith Re-saw.
 - Penons, Pony Planers, Mortisers, Jig Saws, Sanders, Gasoline Engines, Fans, Jointers, Lathes.
- Blue prints of all machines will be sent upon application. Write and get our prices before buying.

PRICE MACHINERY CO.

507 Great Northern Bldg. CHICAGO, ILL.

STRUCTURAL IRON WORK

For Immediate Delivery.

- EYE BEAMS, from 3 in. to 20 in. CHANNELS, from 1 1/2 in. to 15 in. ANGLES, 1 in. to 6 in. FLATS & BARS up to 20 in. wide. ROOF TRUSSES, GIRDERS, COLUMNS, and BRIDGES designed and built. Bridge Railings a Specialty.

BELMONT IRON WORKS
PHILADELPHIA, PA.

SECOND HAND Electrical Machinery

BOUGHT AND SOLD.

Correspondence solicited.

THOMPSON, SON & CO.

107 Liberty Street, NEW YORK.

High Speed Engine Bargains

No.	H. P.	Maker	Cylinders
1	200	Buckeye	16 1/2 x 27
1	90	Atlas C.	14 x 30
1	75	Westinghouse	12 x 11
1	65	Beck-Taylor	10 1/2 x 12
1	60	Ball	10 x 12
1	40	A. & S.	8 1/2 x 12
1	30	Atlas C.	9 x 14

CAMP ENGINEERING CO., 47 W. Lake St., Chicago, Ill.

SECOND-HAND.

We have a number of Dynamos and Motors, which we have displaced with larger units. These are all overhauled and guaranteed to be in good working order before shipping. The prices are very moderate indeed. Your correspondence is solicited.

THE W. C. BENBOW CO.

Manufacturers' Agent, COLUMBUS, OHIO.

FOR SALE.

Second-hand Corliss Engines,

100, 150, 200, 350, 500 and 800 H. P. Boilers, all sizes. Steam Pumps in great variety. Send for bargain list of second-hand machinery.

S. L. HOLT & CO.

67 Sudbury Street, BOSTON, MASS.

FOR QUICK SALE.

A nine-inch four-side Horizontal Moulder, in good running condition. Will be sold at a reduction before removal. Address

L. F. SEYFERT'S SONS,

437-441 N. Third St., PHILADELPHIA, PA.

FOR SALE.

3 80-horse power Return Tubular Boilers

in good condition.

W. B. McCABE, West Norfolk, Va.

SECOND-HAND DYNAMOS AND MOTORS EXCLUSIVELY

Largest Stock in the World.

Send for our Monthly Bargain Sheet, with lowest net cash prices on machines in stock—Everything Fully Guaranteed. Capital, \$100,000.00 Paid up.

GREGORY ELECTRIC CO.

54, 56, 58, 60, 62 S. Clinton St., CHICAGO.

Second-hand Machinery.

LATHES.

- 12 and 20" triple-gear pit, A1.
 - 96x14 Wilmarth, triple-gear.
 - 60x20 Wilmarth, triple-gear.
 - 46-64x30 Wilmarth, double head.
 - 48x14 Fitchburg.
 - 36x18 Betts, double-gear compound.
 - 32x10 Draper, compound, A1.
 - 30x23 D. W. Pond, C. R. & P. C. F. A1.
 - 30x10 Draper, C. R. & P. C. F.
 - 27x12 Draper, C. R. & P. C. F.
 - 27x8 ditto.
 - 26x12 Wright, O. H. & Assoc.
 - 23x8 Putnam, H. & F.
 - 20x10 Cincinnati, C. H. A1.
 - 20x7 Draper, C. R. & P. C. F.
 - 19x11 Lodge & Davis, C. R. and taper.
 - 18x8 Draper, C. R. & P. C. F.
 - 17x8 Prentiss, C. R. & P. C. F.
 - 14x6 Le Blond, plain turning.
 - 14x6 Prentiss, R. & F.
- Also large assortment of box monitors, speed and turret lathes.

PLANERS.

- 61x6x28 Hepworth.
- 41x25x16 Whiteomb.
- 48x36x12 New Haven.
- 24x24x6 Whiteomb.
- 24x24x6 Flather.
- 24x24x8 Pratt & Whitney.
- 18x16x36 Putnam.

MISCELLANEOUS.

- 50x12 Nicholson & Waterman horizontal boring machine, fine.
 - 60" Pond vert. boring and turning mill.
 - 48" Bickford ditto, fine.
 - 100-lb. Niles steam hammer.
 - 1400 and 1700-lb. Merrill drop hammers, fine.
 - 400, 800, 1000 and 2200-lb. ditto.
 - Beaman & Smith vert. spindle milling mch.
 - No. 6 Brainard Lincoln type miller.
 - No. 15 Garvin plain miller, B. G.
 - No. 1 Brown & Sharpe univer., without arm.
 - No. 23 Brown & Sharpe plain, 49" table feed.
 - 2 No. 2 Becker vert. millers, with rotaries.
 - 11" Lowell slotter.
 - 40" Michel sliding head power feed drill, B. G. P. F.
 - 25" Gould & Eberhardt ditto, fine.
 - 60" Keystone radial.
 - 28" South Bend drill, B. G. & P. F., fine.
 - 14" Prentiss crank shaper, A1.
 - 26" Smith & Mills crank.
 - 28" Smith & Mills shifting belt.
 - No. 2 and No. 3 Landis unit grinders.
 - 27x18 Springfield surface grinder.
 - Nos. 0, 1 & 2 P. & W. screw machs., wire feed.
 - No. 1 Colburn keycutter.
 - Ideal twist drill grinder.
 - 19" Swamscot plate planer.
 - 8" power bending rolls.
- Also large assortment of other tools. Send for second-hand list.

PRENTISS TOOL & SUPPLY CO.,

115 Liberty St., New York, N. Y.
Buffalo Office, Block 36 Machinery Hall,
Pan-American Exposition.
Boston Office, 200 Franklin St.

Good Second-Hand Machinery.

- One 14x42 Harris Corliss Engine.
- One 23x48 Corliss Engine, Geo. Corliss make.
- One 14x28 Taylor Corliss Engine.
- One 16x28 Horizontal Engine, link motion.
- Three 44-in. Tolhurst Whizzers with Engine, new.
- One 40-in. Tolhurst Whizzer with Engine, new.
- Two 42 in. Dienelt & Eisenhardt Whizzers, with Engines.
- 20, 26, 30-in. Belt Whizzers.
- One 36-in. Weston Belt Whizzer, nearly new.
- Large Lot Lathes, Drill Presses, Pumps, Power-Presses, Drop-Presses, Foot-Presses, Evan's Screw-Presses, Wood-Working Machinery.

J. NUTTALL,

1723 N. 5th Street, Philadelphia, Pa.

Largest Assortment. Immediate Delivery.

Send for Catalogue.

- 1 30"x60" Greene Engine.
 - 1 28"x48" Hamilton left-hand Corliss Engine.
 - 1 26"x48" Greene Engine.
 - 1 16"x30" Fitchburg Cross Compound.
 - 1 14"x28" Cross Compound Fitchburg.
 - 1 13"x20" McEwan Tandem Comp. Engine.
 - 1 17"x30" Williams Automatic Engines.
 - 1 16"x24" Beck Automatic Engine.
 - 2 15 1/2"x15" Armstrong & Sims Engines.
 - 1 15"x30" Buckeye Automatic Engine.
 - 1 14"x15" Ideal Engine.
 - 1 12"x12" Armstrong & Sims Engine.
 - 1 10"x15" Ball Tandem Compound Engine.
 - 14 Water Tube Boilers, 165 to 200 lbs. steam pres.
 - 22 Horizontal Tubular Boilers.
 - Several full Railway Equipments.
- Large stock of Machine Tools. Let me know your wants.

FRANK TOONEY,

127-131 N. Third Street, PHILADELPHIA, PA.
Long Distance Telephone 261-262.

FOR SALE.

- 2 Band Saw Mills, 1 Brick Plant, 1 Endless Rope Mine Haulage Plant, 4 10-ton Shay Geared Locomotives, 18 standard gauge Flat Cars, Boilers, Engines, Rail and Equipment.
- WANTED—Relay Rail, Second-Hand Equipment, Locomotives, Cars, Etc.

THE MILLER SUPPLY CO.,

Huntington, W. Va.

Second-Hand MACHINERY

For Immediate Delivery.

- 1 36 in.x36 in.x9 ft. Sellers Planer, 1 head.
- 1 36 in.x36 in.x7 ft. Sellers Planer, 1 head.
- 1 30 in.x30 in.x10 ft. P. & W. Planer.
- 1 32 in.x32 in.x10 ft. P. & W. Planer.
- 1 3 Spindle Jones & Lamson Drill Press.
- 1 6 Spindle Nut Tapper, 1/2 in.
- 1 10 in New Haven Shaper.
- 1 Bement Traverse Shaper, 60 in. table, 14 in. Stroke.
- 1 Bement Traverse Shaper, 72 in. table, 12 in. Stroke.
- 1 No. 1 Brainard Universal Milling Machine.
- 1 No. 4 Lodge & Davis Universal Milling Machine.
- 1 Portable Air Compressor, motor driven.
- 1 No. 7 Long & Allstatter Punch.
- 1 20 in.x21 ft. Johnson Engine Lathe.
- 1 46 in.x24 ft. Engine Lathe.
- 1 48 in.x24 ft. Engine Lathe, triple geared
- 1 14 in.x6 ft. Blaisdell Engine Lathe.
- 1 16 in.x8 ft. Blaisdell Engine Lathe.
- 1 24 in. Gisholt Turret Lathe.
- 1 28 in. Gisholt Turret Lathe. (New.)
- 1 60 in. Heavy Radial Drill, 5 in. spindle.
- 1 42 in. Betts Radial Drill.
- 1 3 in. National Bolt Cutter.

U. Baird Machinery Co.

123-125 Water Street,

PITTSBURG, PA.

FOR SALE.

Boiler Bargains.

- 3 125 H. P. 72"x16", 76 4" tubes.
 - 1 Double Deck Hor. Boiler, 60"x14", with steam drum 48"x15", 74 3" tubes.
 - 1 80 H. P., 60" diam., 16' long, 49 4" tubes. All above good for 90 lbs. or more.
 - 10 Hughes Duplex Steam Pumps, 4" suction, 3" discharge; in fine working order.
- Cheap to quick buyers. Large line of Vertical and Horizontal Boilers and Engines and Machinery of all kinds.

J. D. MALLORY,

22 Light Street, Baltimore, Md.

READ THIS!

If you are in the market for a second-hand Boiler and Engine, Steam Pump, Feed-Water Heater, Steam Trap, Dynamos, second-hand Belting, Pulleys, Hangers and Shafting, second-hand Steam Pipe, any size or quantity; Wrought Iron Tanks, Smoke Stacks of any kind, kindly communicate with us, as we are in a position to fit you out, and will guarantee perfect satisfaction or refund the money and bear all expenses.

JOHN HENNING & SON,

1016-20 East Susquehanna Ave., Philadelphia, Pa.

CONTRACTORS' PLANT

FOR SALE.

- 1 Lidgerwood Double 8"x10 Double Drum Hoisting Engine.
- 1 16"x30"x42" Cooper Corliss Tandem Compound Engine, with 15 ton fly wheel, 18"x38" face.
- 1 Ingersoll Compressor, 16-16x24.
- 1 Morris Co. Compressor, 9 1/2"-9 1/2"x15.
- 1 Rand Belt Driven, 6"x16".
- 2 Cockburn Concrete Mixers.

J. C. SAXTON, 18 Broadway, New York.

FOR SALE.—Engine, 12x16, \$200. Three Traction Engines, 10 and 12-horse, \$300 each. 10 and 12-horse Portable on wheels, \$200 each. Engine Lathe 20" swing, \$150. 16" Speed Lathe, Pratt & Whitney, \$60. Pratt & Whitney Drill Press, \$15. Five Boilers, 56"x18", 20 flues 6", \$300 each. Upright Boilers, engines all sizes. Double Saw Mill, Brownell make, 36" carriage, 3 head blocks, complete, \$350. 33 Engines and Boilers, from 6 to 100-horse, at buyers' prices. D. L. CASEY MACHINE CO., Springfield, Ohio.

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BOILERS—HORIZONTAL.

(Second-hand.)
No. B-97-36"x8", 25 3" tubes. No. B-106-50"x14", 41 4" tubes. No. B-96-30"x28", 20 3" tubes. No. B-99-40"x10", 32 3" tubes. No. B-105-48"x14", 47 3" tubes. No. B-109-54"x15", 64 3" tubes. No. B-112-60"x12", 46 3 1/2" & 2 15" tubes. No. B-116-60"x6", 28 4 1/2" tubes (5). No. B-125-72"x5 1/2", 61 4" tubes. No. B-102-60"x12", 70 3 1/2" tubes. No. B-100-44"x10", 38 3" tubes. No. B-113-60"x15", 52 4" tubes. No. B-114-60"x16", 54 4" tubes. No. B-104-48"x12", 54 3" tubes. No. B-98-40"x10", 32 3" tubes. No. B-96-54"x12", 71 3" tubes. No. B-99-46"x10 1/4", 34 3" tubes.

BOILERS—VERTICAL.

(Second-hand.)
No. B-157-42"x6", 109 2" tubes, submerged. No. B-148-30"x5", 42 2"x36" tubes. No. B-34-36"x8", 68 2"x5" 8" tubes. No. B-149-28"x5", 37 2"x11" tubes. No. B-162-28"x5", 37 2"x37" tubes. No. B-151-30"x6", 55 2"x2" 3" tubes, submerged. No. B-150-30"x8", 50 2"x38" tubes, submerged. No. B-160-30"x6 1/2", 37 2"x4 6" tubes.

(New.)

No. B-144-24"x6", 24 2"x49" tubes.

PORTABLE BOILERS.

(Second-hand.)
No. B-131-15 H. P., 24 3"x6" tubes. No. B-133-18 H. P., 28 3"x5" tubes. All second-hand, in good working order.

ENGINES—HORIZONTAL.

(Second-hand.)
No. B-1-10"x16". No. B-6-7"x10". No. B-8-7 1/2"x10". No. B-22-9"x15". No. B-27-13"x18". No. B-28-11"x16". No. B-29-7 1/2"x14". No. B-37-12"x20". No. B-40-12"x15". No. B-44-14"x20". No. B-45-5"x8". No. B-46-18"x20". 100-hp. valve. No. B-47-5"x8". No. B-2-12"x20". No. B-12-6 1/2"x12". No. B-17-8"x12". No. B-20-10"x12". No. B-16-6"x10". No. B-7-6"x12". No. B-11-8"x12". No. B-31-12"x24". No. B-39-14"x24". No. B-41-7"x10".

(New.)

No. B-4-6"x8". No. B-9-7 1/2"x7 1/2". No. B-13-8"x12". No. B-14-8"x10". No. B-23-11"x14". (2). No. B-36-9"x12". No. B-15-16"x14". No. B-31-10"x12". No. B-18-10"x15" (2). No. B-10-8"x10".

ENGINES—VERTICAL.

(Second-hand.)
No. B-51-4"x5". No. B-52-3"x5". No. B-53-4 1/2"x7". No. B-57-5"x7". No. B-58-5"x6". No. B-59-8 1/2"x5 1/2". No. B-61-5 1/2"x3 1/2". No. B-67-8"x8". No. B-68-9"x9" (double). No. B-70-9"x9". No. B-64-6"x6".

(New.)

No. B-50-3 1/2"x3 1/2". No. B-54-4 1/2"x5 1/2". No. B-55-4"x6". No. B-56-5"x5". No. B-65-7"x7". No. B-49-10"x10". Second-hand engines in good order, and all equipped with usual fixtures.

ENGINES—GASOLINE.

(New.)

No. B-89-7 H. P. No. B-90-6 H. P.

AIR COMPRESSORS.

(Second-hand.)
No. B-501-5"x5". No. B-504-9 1/2"x9 1/2"x10". No. B-505-9"x15 1/2"x12". No. B-507-water air compressors (3). No. B-506-water air compressors (2). No. B-509-water air compressors (C). No. B-510-2 1/2"x6 1/2" (double). No. B-500-8"x16"x12". No. B-502-6 1/2"x8 1/2"x6". All in good order.

Write us for any machinery wanted, or if you wish to exchange or sell. To close out the above quickly will make specially low prices for prompt cash.

C. C. Wormer Machinery Co.

24-40 Shelby Street,

DETROIT, MICH.

FOR SALE.

1 Fairbanks Gasoline Engine (30 horse power). This engine is new and complete in every particular, including a 40-gallon galvanized tank, 1 box batteries, fixtures, piping, belting, and an extra 525-gallon galvanized gasoline tank. Will sell at a great bargain. 1 Steam Fire Engine, late from Baltimore department. 4 Hoisting Engines, 15, 18 and 25-horse power respectively. A number of single and duplex Steam Pumps, Cistern, Deck and Deep Well Pumps (new). General machine work and repairing. I make a specialty of repairing Steam Pumps, High-speed and Gasoline Engines.

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FOR SALE CHEAP.

One Marine Boiler, 180 H. P. One Erie City Box Bed Engine, 50 H. P. Two Locomotive Boilers, 30 H. P. One 6"x15" Rock Crusher. One ten stamp Frazer & Chalmers Mill. Three Concentrators, one Golden Gate, two Embury. One Frue Vanner. One No. 10 Cameron Pump. One 24" Buhr Mill. One Electric Separator. One Fairbanks Scale, No. 8, 2,000 lbs. capacity. One Pul-someter Pump, No. 4.

All of the above in good and first-class order. Will make especially low prices to move. Write for particulars.

J. B. KENDALL, Washington, D. C.

PROMPT DELIVERY.

- 1 60"x20" Engine Lathe.
- 1 60"x60"x20" Planer, 2 heads.
- 2 24"x48" Wheelock Engines.
- 2 80 H. P. Ball Engine.
- 1 Dunham 1/2" Nut Machine.
- 1 Hot Nut Machine, 1".

GEO. H. BOWLER,

507-508 Williamson Bldg. CLEVELAND, O.

2 Osgood Dredges FOR SALE.

Hull 70 x 17 x 8 ft. with 6 x 29 ft. pontoons. 1 1/2 Yd. Dipper Steel Boom, 45 ft.

J. C. SAXTON,

18 Broadway, NEW YORK.

For Sale

We offer the following items
subject to prior sale:

ENGINES.

- 2 250 H. P. high-duty Atlas, rope driven.
- 1 pair Williams engines, 250 H. P. each.
- 1 22x60 Rankin-Fitch Corliss.
- 1 13x34 Putnam.
- 1 20x30 slide valve.
- 1 18x28 Nichols Burr.
- 1 22x36 Wright Corliss.
- 1 13x22x15 cross compound Armstrong & Sims.
- 1 15x17 Ideal.
- 1 15x16 Ball.
- 1 13x12 Ball.
- 1 12x12 Armstrong & Sims.
- 1 pair twin engines, 15x22.
- 1 20x40 automatic, with Nordberg governor.
- 1 McEwen compound.
- 1 Payne compound.
- 1 10x20x20 Rice automatic.
- 1 14x20 Atlas slide valve.
- 1 12x20 Atlas slide valve.
- 1 11x16 Atlas slide valve.
- 1 12x24 automatic.
- 1 12x24 slide valve.
- 10 Tiff engines, 9x12.
- 1 10x18 Buckeye.
- 1 11x16 Russell automatic.
- 1 8x14 Taylor-Beck.
- 1 10x22 plain slide valve.
- 1 9x14 slide valve.
- 1 10x18 vertical.
- 1 9x9 vertical Racine.
- 1 9x15x9 Westinghouse.
- 1 13x22x13 Westinghouse.
- 1 14x24x14 Westinghouse.
- 2 12x20x12.
- 1 10x8x10.
- 1 6x6x6.
- 1 12x10 Standard.
- 1 10x9.
- 1 12x11.

GAS AND GASOLINE ENGINES.

Gas and gasoline engines from 1 to 50 H. P.

BOILERS.

- 20 60x18 tubular.
- 10 60x16 tubular.
- 12 54x16 tubular.
- 4 72x20 tubular.
- 4 72x18 tubular.
- 1 Heine safety boiler, 80 H. P.
- 1 Sterling water tube, 125 H. P.
- 1 200 H. P. internally fired boiler.
- 1 25 H. P. upright fire box boiler.
- 1 35 H. P. upright fire box boiler.
- 1 40 H. P. upright fire box boiler.
- 1 45 H. P. upright fire box boiler.
- 1 50 H. P. upright fire box boiler.
- 1 60 H. P. upright fire box boiler.
- 1 90 H. P. "Economic" Erie City.
- 1 450 H. P. Hazelton tripod boiler.
- 1 50 H. P. Hazelton tripod boiler.
- Also fire box boilers of all sizes from 10 to 50 H. P.

DYNAMOS.

- 1 T-H direct 600-light.
- 1 T-H direct 500-light.
- 1 Westinghouse alternator, 1000-light, 1000-volt.
- 1 60 k.w. Slattery alternator.
- Also have electric motors of all sizes from 1/4 to 30 H. P.

1 Standard Gauge Rogers American Type Locomotive.

Diameter of cylinder, 15 1/2 in.; stroke, 22 in.; number of drivers, 4; thickness of tires, 1 3/4 in.; fire box, 4 ft. 3 in. by 2 ft. 10 in. by 4 ft. 6 1/2 in.; weight, 30 tons; complete with tender; has been rebuilt from the ground up, and is in first-class condition.

TANKS.

- 2 36x12 in. high.
- 2 30x14 in. high.
- 1 40x10 ft. long.
- 1 open tank, 24 in. by 5 ft. long.
- 2 galv. 24 in. by 7 ft. 8 in. long.
- 1 jacketed galv. 30x30 in. high.
- 1 22 in. by 3 ft. 4 in. high.
- 1 24 in. by 3 ft. 6 in. high.
- 1 galv. jacketed, inside diam., 23 in.; outside, 27 in.; inside depth, 24 in.; height over all, 28 in.
- 3 24 in. by 4 ft. 6 in.
- 1 50-gal. kettle.

Write for our Complete Catalogue No. 239.

We are constantly adding to our stock of machinery and supplies, and will be pleased to estimate on your requirements.

Chicago House Wrecking Co.

W. 35th and Iron Sts., CHICAGO.

STEAM ENGINES.

- 1 20" and 36"x48" Tandem Hamilton Corliss, wheel 22"x56" face.
- 1 34 in. x 56 in. Geo. H. Corliss rolling mill engine, right hand wheel, weighing 40 tons, 26 ft. diameter.
- 1 36x72 Wheelock.
- 1 29x72 Wheelock.
- 2 30x60 Harris Corliss right and left hand wheels, 58" face by 20 ft. diameter.
- 1 24"x48" Bates Corliss.
- 1 20"x48" Geo. H. Corliss.
- 1 16"x42" Bates Corliss.
- 1 10"x24" Harris Corliss.
- 1 11"x30" Brown.
- 1 16 1/2 in. x 25 in. x 15 in. cross compound Armstrong & Sims.
- 1 14 in. and 24 in. x 14 in. Westinghouse compound.
- 1 16 in. and 27 in. x 16 in. Westinghouse compound.
- 2 13"x12" Erie Ball.
- 2 12"x12" Ball automatic.
- 2 13 in. x 14 in. Watertown automatic.
- 1 14 in. x 13 in. Armstrong & Sims automatic.
- 1 15 1/2 in. x 16 in. New York safety automatic.
- 1 15 1/2 in. x 15 in. Armstrong & Sims automatic.
- 2 16 in. x 16 in. Ball automatic.
- 1 18 1/2 x 18 in. Ideal automatic.

BOILERS.

- 2 375 H. P. Sterling water tubes for 150 lbs.
- 2 200 H. P. National water tubes for 125 lbs.
- 2 175 H. P. Sterling water tubes.
- 3 60"x16" Return Tubulars.
- 2 500 H. P. Hazelton boilers.

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- 1 600 H. P. Snow condenser.
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- 4 300 K. W. M. P. 4, General Electric.
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- 2 111 K. W. M. P. 4, Westinghouse.
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MOTORS.

110, 220, 500-volt motors, from 1 H. P. to 200 H. P.

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ALTERNATORS,
ARC DYNAMOS,
LAMPS, STREET-CAR, ETC.

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Electrical and Steam Machinery,

141 Broadway, N. Y. Factory, Jersey City, N. J.

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PARTIAL LIST OF

SECOND-HAND MACHINERY.

- 2 120-h. p. 60"x18" Tubular Boilers.
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- 1 100-h. p. 13x12 Ball Automatic Engine.
- 2 16x12x10 Worthington Duplex Pumps.
- 2 34 Exhaust Fans.
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- 1 13 1/2 x 10 1/2 Smith-Valle Single Pump.
- 1 12-in. Centrifugal Wrecking Pump with Direct Connected Engine.
- Also a large number of Smaller Engines, Boilers, Pumps, Heaters, etc.

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BIG BARGAINS.

General Electric, three phase, sixty cycle, Inductor Motors

- 1 15-H. P. 110 volt, speed 900, price \$350.00
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Chicago delivery, ready to ship. Hundreds of other bargains in stock. GUARANTEE ELECTRIC CO. 133 S. Clinton St., CHICAGO

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SPECIAL GAS ENGINE BARGAINS.

50 H. P. Foss, 38 H. P. White & Middleton, 25 H. P. New Era, 25 H. P. Fairbanks-Morse, 15 H. P. Otto, 12 H. P. Otto, 10 H. P. New Era, 2-12 H. P. Fairbanks-Morse, 15 H. P. Chicago, 12 H. P. Chicago, 2-7 H. P. Chicago, 2-3 H. P. Chicago, 2 H. P. Fairbanks-Morse, 2-3 H. P. Fairbanks-Morse. Engines, all sizes, bought, sold and exchanged. Address

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A TRAVELING CRANE,

34 feet span, with 1 6-ton Harrington Hoist.

A Bargain.

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- 1 3-sided Planer and Matcher, Frank, \$175.
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- 1 48" 3-roll Egan Sander, \$400.
- 1 30" Single Drum Sander, \$45.
- 2 20" Pony Planers, each, \$65.
- 1 24" Single Surfacer, \$100.
- 4 Engines.
- 2 Boilers.

Write for complete list.

Cleveland Belting & Machinery Co.

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- One 8-horse power Upright Engine,
- One 9-horse power Upright Boiler.
- One 11-horse power Upright Boiler.

E. J. CODD CO.,

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FOR SALE.

We carry a large line of Engines, both new and second-hand, in stock—cross-compound Corliss, tandem-compound Corliss and simple Corliss from 1500 H. P. down to 75 H. P.

Automatic Engines, every size and make—slide and piston-valve Engines from 1000 H. P. down to 5 H. P.

BOILERS—Water tube, horizontal tubular, locomotive Boilers, etc.

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MACHINE TOOLS—Lathes, planers, shapers, drill presses, chucks, emery wheels, power punches, etc.

BLOWERS, Exhaust fans, shafting, pulleys, hangers, valves, governors, belting and pipe.

PUMPS—All sizes and makes from 3,000,000 gallons down.

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1 600-light Edison incandescent dynamo.

2 400-light Edison incandescent dynamos.

1 60-light Thomson-Houston incandescent dynamo.

1 65-light Brush arc.

1 60-light Wood arc.

1 60-light Thomson-Houston incandescent dynamo.

1 30-light Brush dynamo.

ROLLING-MILL MACHINERY.

One 18" muck mill, one 18" sheet-bar mill, one squeezer, iron and wooden jib cranes, traveling cranes, rotary shears, hydraulic pumps, floor-plate, buggies, etc.

STEAM HAMMERS.

4000, 1200, 700 and 400 pounds double-legged Morgan.

275 pounds single-legged Kiline.

ICE AND REFRIGERATING PLANT.

One pair of Pi-tet horizontal Ice Machines, consisting of two Corliss Engines, 16"x36", and ammonia Compressor, 10"x36" (ammonia end being new and manufactured by the Vilter Manufacturing Co., Milwaukee, Wis.); capacity of each machine 25 tons ice or 50 tons refrigerating.

The above is a very fine machine, thoroughly overhauled, and has just been sold to us by a Pittsburgh firm, who replaced it with a machine of much larger capacity. Price \$4600 f. o. b. Pittsburgh.

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One Worthington Duplex 55x20x25, rods 3 1/2" diameter, displaces 22,000 gallons per stroke, 110 strokes per minute. Total capacity over 5,000,000 gallons in twenty-four hours. Weight about 40,000 pounds.

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Second-Hand Machinery.

- 3 13x5 Blaisdell lathes, elevating rest.
- 6 13x6 Blaisdell lathes, elevating rest.
- 2 14x5 Bradford lathes, plain rest.
- 3 14x6 Flather lathes, elevating rest.
- 2 14x6 Ames lathes, elevating rest.
- 10 15x6 Blaisdell lathes, elevating rest.
- 2 15x6 Prentice lathes, compound rest.
- 1 20x8 Putnam lathe, compound rest.
- 1 22x9 New Haven lathe, compound rest.
- 1 22x22x5 Fitchburg planer.
- 1 30x30x10 Putnam planer.
- 1 36x36x10 Wilson planer, two heads.
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- 8 20" Barnes Rd. base, power-feed drills.
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- 2 25" Barnes back-geared power-feed drills.
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- 1 40" New Haven back-geared power-feed drill.
- 1 No. 12 Brown & Sharpe miller.
- 4 No. 3 1/2 Garvin plain back-geared millers.
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- 2 1 Cleve. auto. screw machines.
- 7 2 Cleve. auto. screw machines.
- 1 5' Niles boring mill, one head.

Also large lot of other tools. Send for list.

THE S. M. YORK MCHY. CO.

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13 1/2-17 1/2 S. Eighth Street,

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New and Second-Hand Boilers, Engines, Mining Outfits and General Machinery.

One Complete Stem Fertilizer Plant, including 1 Exhaust Fan, fittings and piping; 90" Chain Belt and Sprocket Wheels; Drier and fittings; Conveyor and belting; 22" Conveyor and fittings; Elevator Sprocket Wheels and Chain; Belting; Scientific Attrition Mill, No. 14; Exhaust Fan; 43" Piping; Dust Collector and connections; Reel and fittings; Transmitting Rope Sheave; 1 large Breaker; 1 Combination Breaker; 1 Magnetic Separator; 1 Self Feed Ross Cutter, No. 116; Conveyor and Elevator; 1 30" New American Turbine Wheel, all bearing parts new.

FOR SALE.

Lot of Boilers, Engines, Lathes, Planers, Drill-Presses, 1 Large Fire Pump, Steam Pipe, all sizes, and about 500 Tanks of different sizes.

WILLIAM ECKBOLD'S SONS,

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FOR SALE.
We own about 2000 tons of
60-lb. STEEL RELAYING RAILS
and Angle Splice Bars for same. Will
sell in lots to suit buyer, and subject to
Hunt & Co.'s inspection. Well located
for Southern delivery.
We also handle new or second-hand
light-weight Rails.

ROBINSON & ORR,
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ATTENTION!
To Eclipse Machine & Boiler Works
1132-1138 W. 14th Street,
CHICAGO, ILLS.

ICE MACHINES.

One 75-ton, Vilter.
Two 15-ton machines.
One 10-ton machine.

BOILERS.
Vertical, Tubular and Fire-box, all sizes.

ENGINES.
One 10x15 Buckeye, automatic.
One 8x16 Buckeye, automatic.
One 11x15 Bay State, slide valve.
Two 10x16, slide valve.
One 8x12, slide valve.

PUMPS.
One 10x7x10 Smith-Valle.
One 4x3x4 Duplex.
One 4x2x4 Dean Duplex.
One No. 5 Knowles.

WOODWORKING MACHINERY.

One 24" Buss Machine Works Planer.
One 30" 3-roll Perry Sander.
One Door Relisher and Wedge Cutter.
One 24" Surfacar, incline bed.
One Double Spindle Shaper.

Write for prices before purchasing elsewhere.

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We have purchased the entire plant of the Iron
Gate Rolling Mill in Virginia, and will have for
sale some first-class second-hand Mill Machinery,
including Shears, Trains of Rolls, Engines, Boilers,
etc., etc. If you are in the market for any of this
equipment, let us know your wants.

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410 Bullitt Building, PHILADELPHIA, PA.

TRY US FOR AN ENGINE

New or Second Hand.
125 to 250 H. P. Corliss and Compounds.
40 to 50 H. P. High Speed Automatics.
15 to 75 H. P. Slide Valve
400 Light, 110 Volt Dynamo.
Send for our list of others.

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**FOR SALE OR EXCHANGE—BOILERS,
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Slide Valve and Upright Engines, Single and
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Goods constantly listed with us. All goods guar-
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H. MOORE CO., 2d & Sycamore Sts., Milwaukee, Wis.
Steam Fitting and Machine Shop.

FOR SALE CHEAP.

One 50-H. P. Locomotive Boiler; one each 100-
H. P., 60-H. P., 9-H. P. and 4-H. P. Vertical Boilers,
all of the above as good as new; very cheap; 60-
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Vertical Boilers, in good condition; one 20-H. P.
Otis Double Cylinder Steam Elevator, all complete
with drum and cab e. A fine heavy outfit for fac-
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one 150-H. P. 22"x30" Farquhar (York, Pa.) Plain
Slide Valve Engine, fly wheel 10'x30", all com-
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dell Slow Speed Electric Motor, 15-H. P., 220
volts; Steam Engines, all sizes; Gas Engines, Job
Printing Presses, all sizes; Wood-working Ma-
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and Pulleys. Always positive bargains at

MENGEL'S MACHINERY EXCHANGE,
26 E. Baltimore St., near Light,
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FOR SALE.

One practically new 20x42 Harris-Corliss En-
gine, price \$1800; one Erie-Ball Engine, 13x12,
perfect order, \$600; one Ideal Engine, 13x12, \$650;
one 12x30 Harris-Corliss Engine, nearly new, run
one year, \$700; one 12x36 Corliss Engine, \$700;
one 26x48 four-valve Engine complete, in good
order, \$1000; one 18x48 four-valve Engine com-
plete, \$800; one 24x48 Automatic Wright Engine,
\$800; two Manning Boilers, 150 H. P. each, good
for 120 lbs. of steam, \$600 each; one Boiler, 66"
diam. 16' long, horizontal tubular, 100 H. P., 3 1/2"
tubes, run two years, all complete, \$350, warrant-
ed 90 to 100 lbs. steam, as good as new.

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33 State Street, BOSTON, MASS.

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Can Ice Making Machinery,
INSTALLED BY
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(60 Ton Daily Capacity)

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For Sale at a Bargain.

LOCOMOTIVES—3 standard gauge locomotives
with tenders; 2 with 16x24 cylinders; 1 with
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saddle tank locomotive, cylinder 9x14".
STEAM SHOVELS—1 Marion, style "A," with
1 1/2 yd. dipper. 1 Osgood with 1/2 yd. dipper.
ENGINES—1 20x40x36 Wright Corliss tandem
compound engine. 1 18x24x42 Fitchburg tan-
dem compound engine. Also several others of
different styles and horse power.
PUMP—1 Worthington compound duplex steam
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HOISTERS—1 pair of 14x24 link motion mine
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CARS, Standard Gauge.
500—40,000 lbs. capacity Hopper Gondolas,
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M.C.B. constr., air and auto. couplers.
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automatic couplers.
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automatic couplers.
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automatic couplers.
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automatic couplers.
CARS, 36-inch Gauge.
25 5-yd. capacity side dump cars. 21 3-yd.
capacity side dump cars. 12 1 1/2-yd. capacity
side dump cars. 7 42-inch gauge Logging cars.
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1 42-inch gauge saddle tank locomotive.
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RELAYING RAILS AND HOISTING ENGINES.
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100 h. p. 12x24 Buckeye Automatic.
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150 h. p. 16x42 Fraser & Chalmers Corliss.
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65 h. p. 12x24 Cooper Slide Valve.
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14x7x10 Smith-Valle Fire Pump.
200 h. p. Baragwanath Heater.
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The above are all in first-class condition and
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1 Buffalo Steam Pump Co.'s Compound Duplex
Pump, size 12 and 18 1/2 by 10 1/2 by 12, perfect
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Corliss Automatic Slide Valve Engines, Boilers,
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FOR SALE.

1 1000-ft. 1 1/2-in. Sherman Cableway, with Lam-
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Stiff Leg, Guy and Breast Derricks, hand and
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Traveling Derrick, Byer's.
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"New Ingersoll" Drills E 9, new and second-
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Pile Driver. Bucyrus Dredge.
Austin "New Era" Graders and Dump Wagons,
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Wheel and Drag Scrapers, used less than one
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Horse and Mule Harness.
Pipe Fitting and Machine Shop outfit.
Plows Shovels, Small Tools, etc.

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For particulars, enquire of

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Corliss and Double Valve Engines for Trolley
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Has been used once. Address
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2nd-Hand 80, 160 and 250 h. p. Berry-
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Good condition.
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1 125 light Lundell Dynamo.
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ENGINES, BOILERS, DYNAMOS, &c., FOR SALE.

In first-class condition at Lowest Prices
in the market.

ENGINES—150 horse Westinghouse Standard;
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BOILERS—3 100 horse h.t., 100 lbs. pressure; 2 80
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GENERATORS—100 K.W., 550 volts, multipolar;
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ALTERNATORS—600 light Westinghouse; 2 1400
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Everything all ready to put right into service.
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SOUTH SIDE ELEVATED R.R.

26-ton Short Wheel Base Engines.

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3 Marion, Model "G" second-hand, 2 1/2-yd.
bucket, friction feed.
1 Marion, Model "G" second-hand, 2 1/2-yd.
bucket, crowding engines, armor clad.
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bucket, friction feed.
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bucket, crowding engines, armor clad.
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bucket, friction feed.
1 Bucyrus, 55-ton, second-hand, 1 1/2-yd. bucket,
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friction feed. 1 Osgood Shovel.
LOCOMOTIVES.
4 9x14, 36-inch gauge saddle tank. 2 7x12, 36-
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saddle tank. 1 9x16, 36-inch gauge Mogul.
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1 8x12, stand, gauge saddle tank (Porter).
3 19x24, stand, gauge, 6-whl. con'ted switchers.
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22 standard gauge, 8-wheel road engines.
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Consolidated.
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1 30 in. Buss Machine Co. surface furniture planer.
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1 36" gauge, 28-ton Shay, geared; 1 36" gauge, 15 to 17 Shay, geared; both right from shops. Other locomotives. All styles. Condition guaranteed.

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1 Vulcan, 10x16 Saddle Tank, 36" gauge (new.)

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Relay Rails, 35-lb. and 40-lb. section. Locomotives for every variety of service, overhauled and ready for use. Make known your wants in locomotives and we can supply you.

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FREIGHT, PASSENGER AND LOGGING
LOCOMOTIVES
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ALL SIZES. **CARS** QUICK DELIVERIES
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RELAYING STEEL RAILS, 25 lbs. to the yard, with splices.
All ready for immediate shipment.

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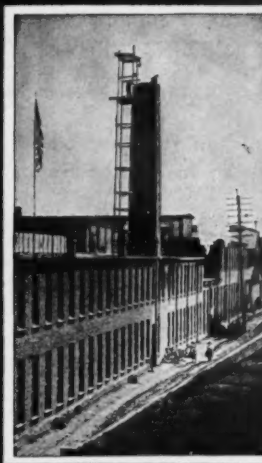
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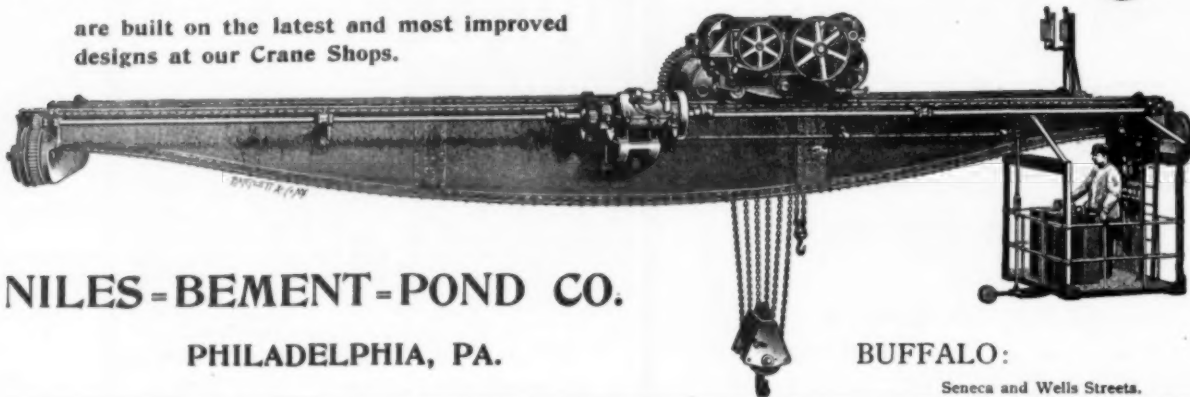
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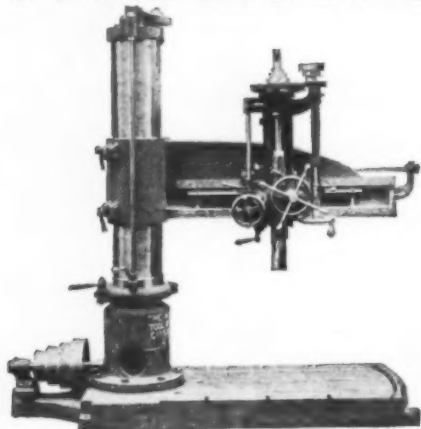
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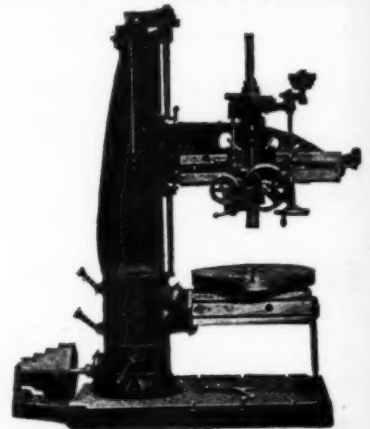
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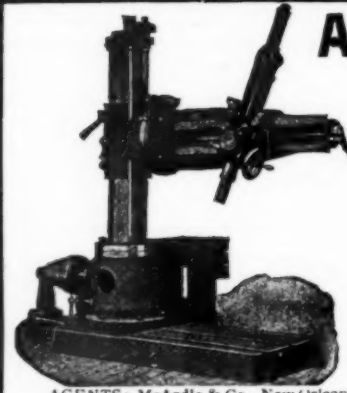
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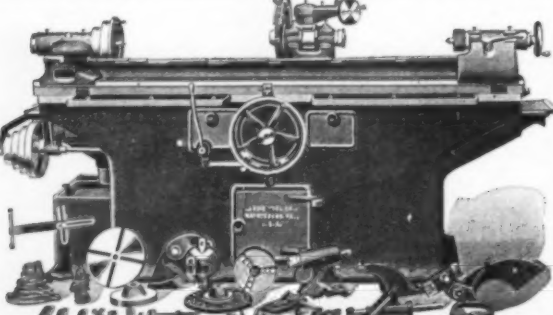


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of the full universal type as shown in this cut will drill holes at any angle from the center of a sphere. It will save resetting work a great many times and the difference between this and the old way will show in the quality and quantity of your work and in your profits. We haven't enough space here to tell you about all the good points in the tool but our catalog gives full detail. Send for it.

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CINCINNATI, O., U. S. A.

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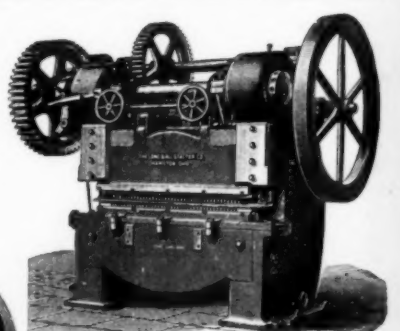
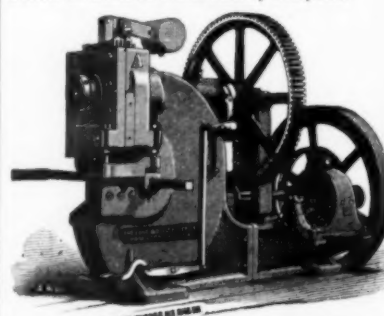
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This machine is adapted to grinding. Spindles, Shafts, Cones, Sides of Saws, and Plates. All work carried by a chuck or face plate, internal or external, and a large variety of parts such as is necessary to finish in a machine shop or tool room. A few pointers in our catalogue.

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BEAM COPING MACHINES,
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Will Run Wet or Dry.

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"The New Yankee"**DRILL GRINDER****Time Saved.**

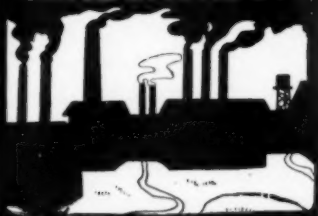
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THE NEW YANKEE DRILL GRINDER

has only ONE adjustment and no gage jaws—a boy can make it, and the time saved means money earned.

12 Styles and Sizes.

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Carborundum wheels for general machine shop use were first put on the market—

Today they are used in almost every large machine shop in the country—There's a reason for it—a new product doesn't make progress like that by chance.

Write for the Carborundum booklet telling all about it.

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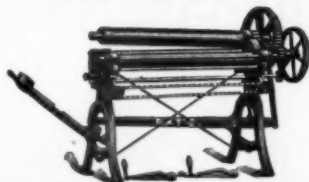
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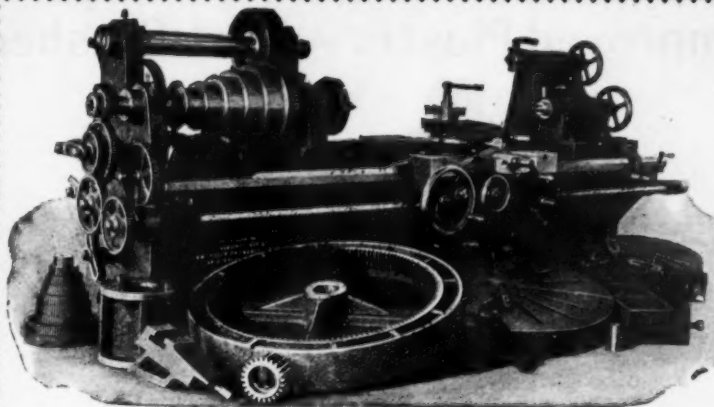
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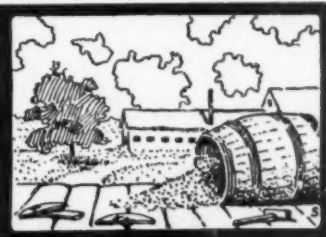
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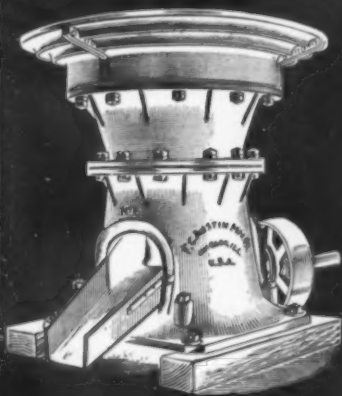
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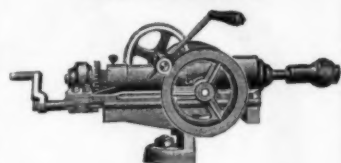
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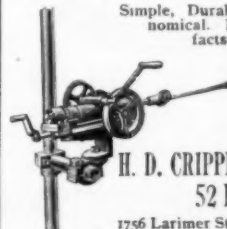


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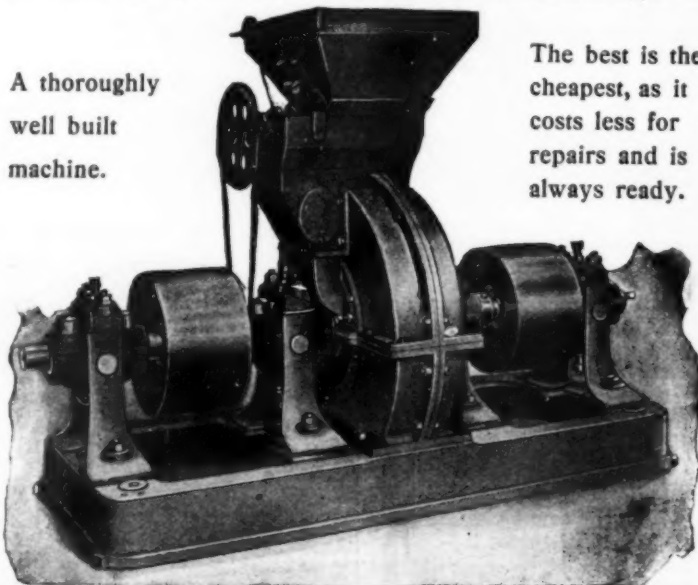
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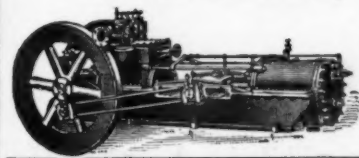
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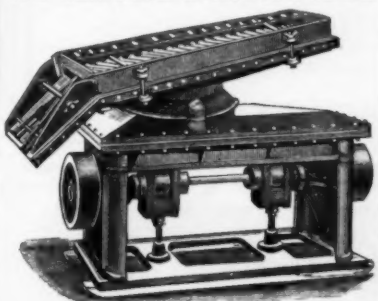
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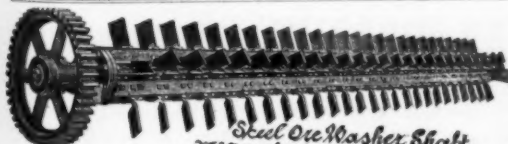
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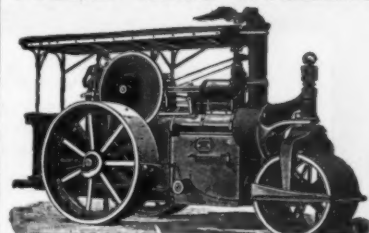
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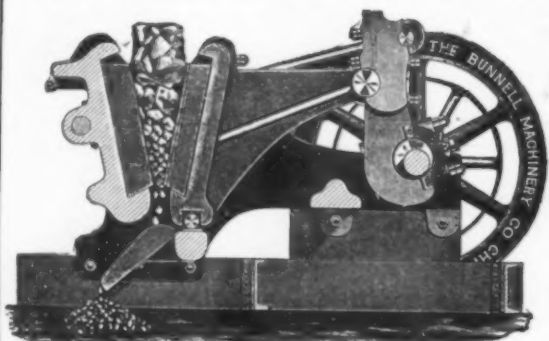
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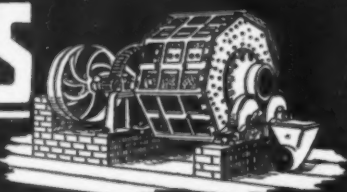
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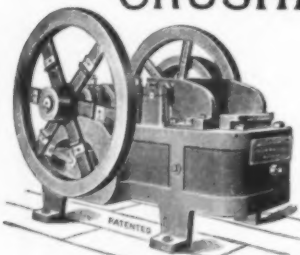
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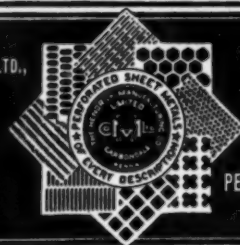
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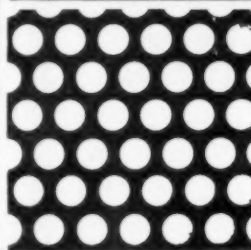
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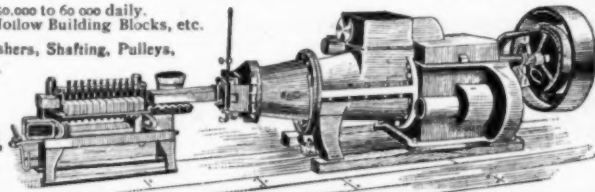
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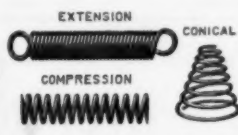
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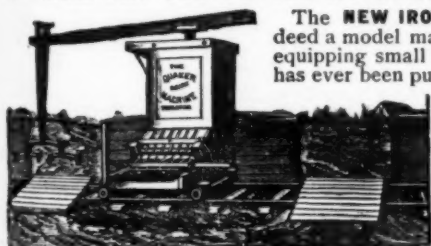
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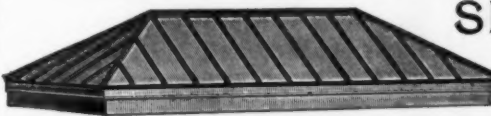
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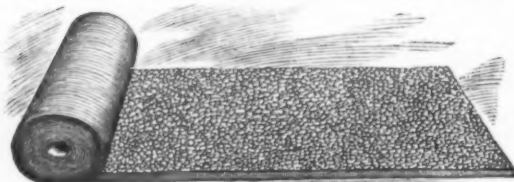
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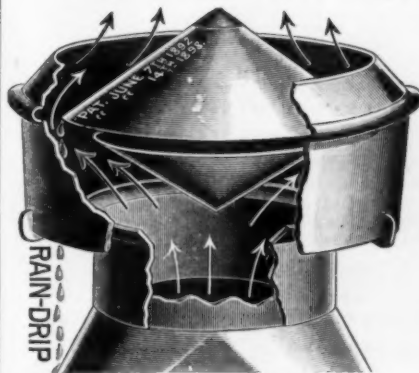
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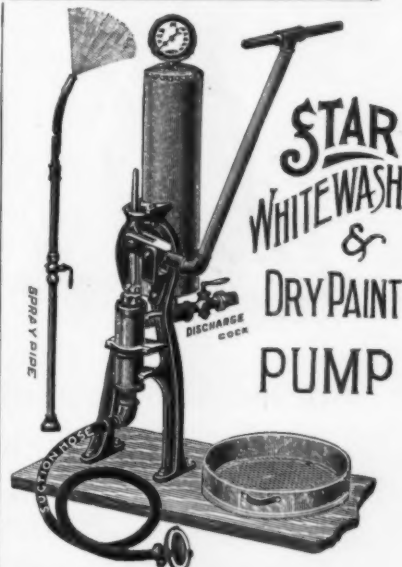
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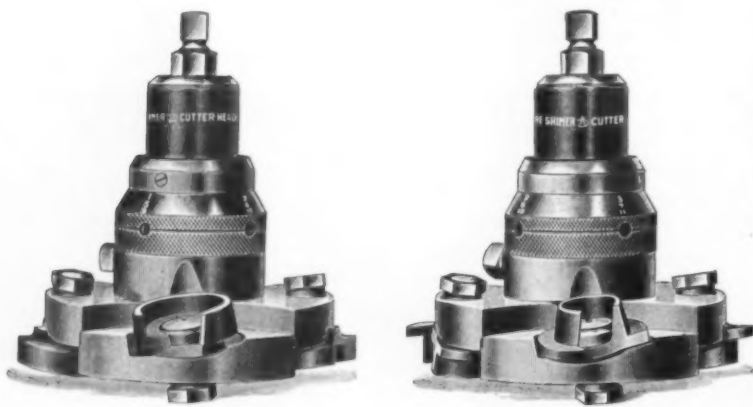
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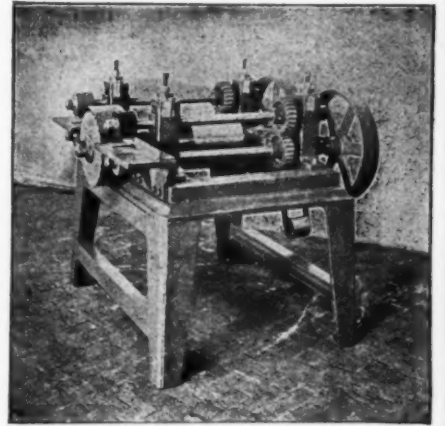
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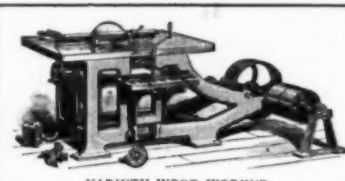
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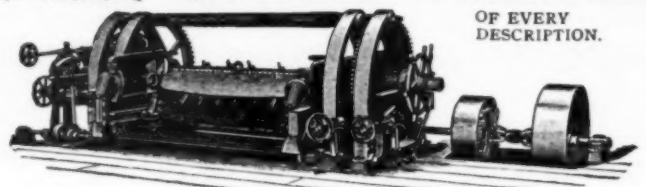
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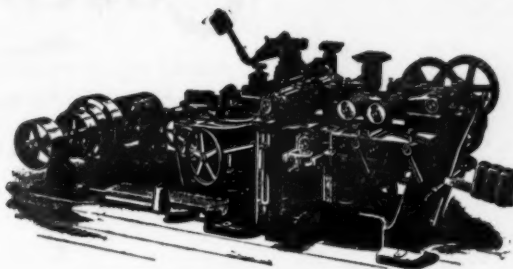
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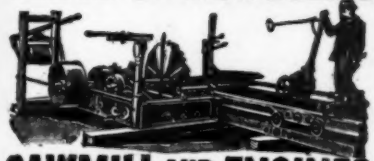
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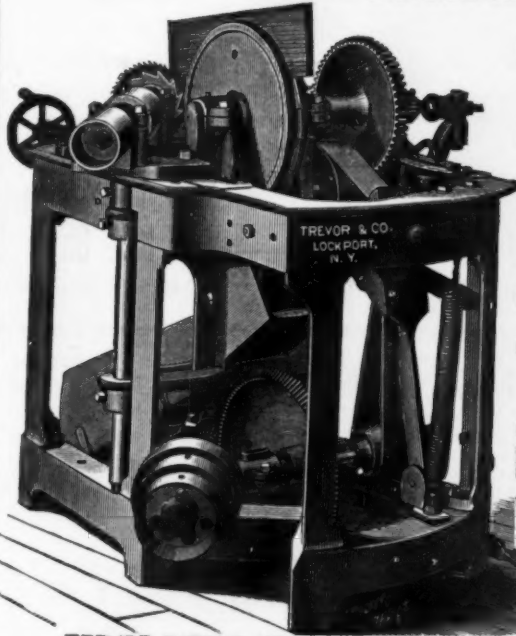
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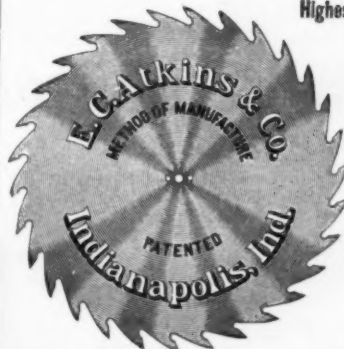


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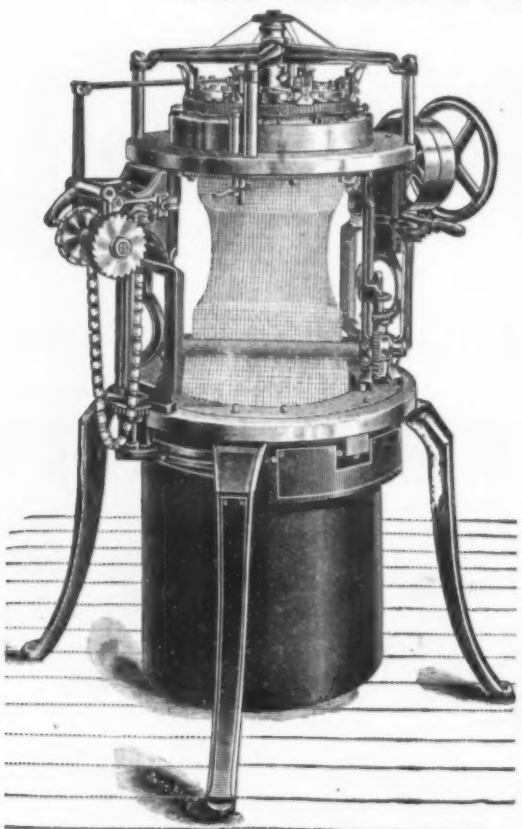
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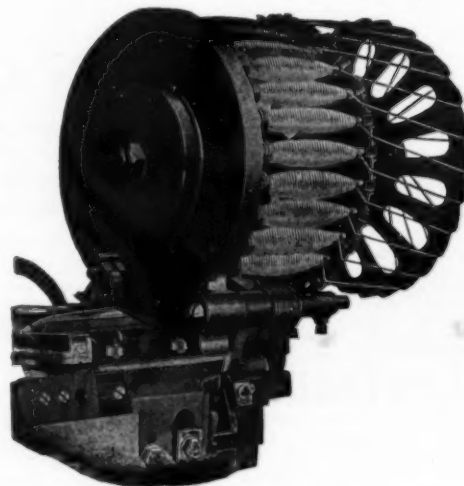


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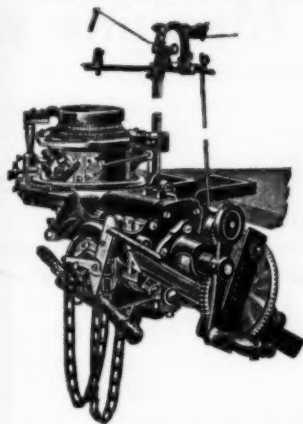
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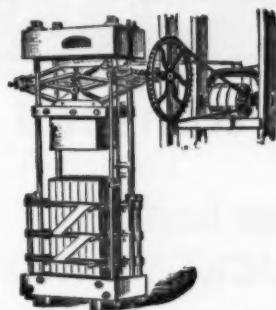
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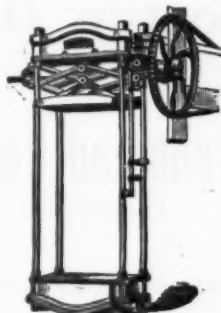
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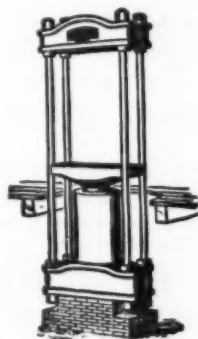
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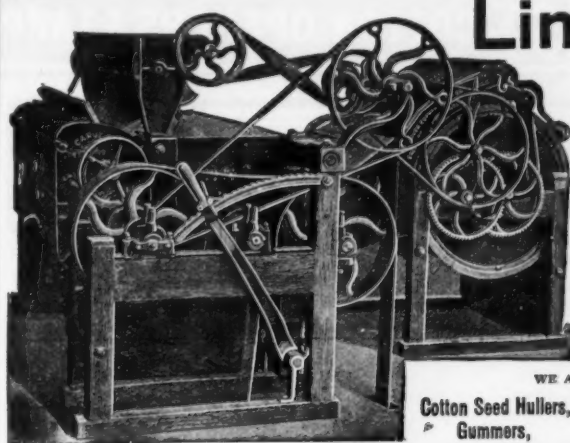
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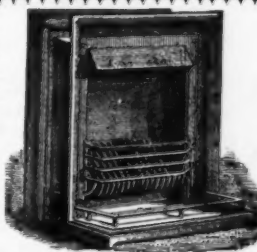
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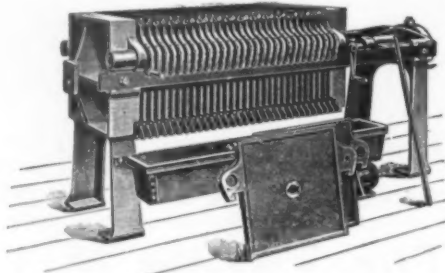
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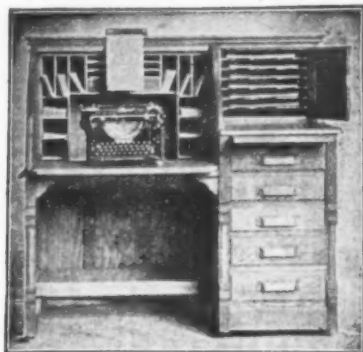
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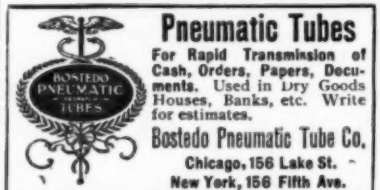
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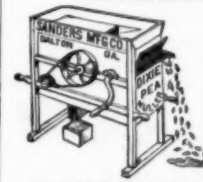
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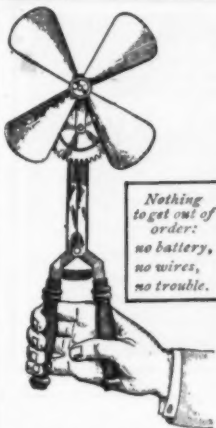
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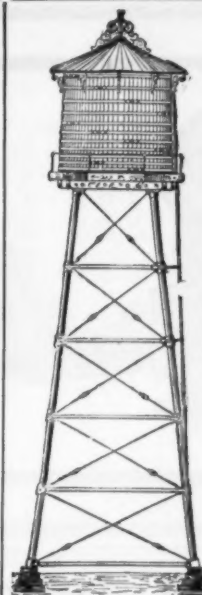
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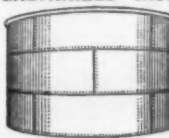


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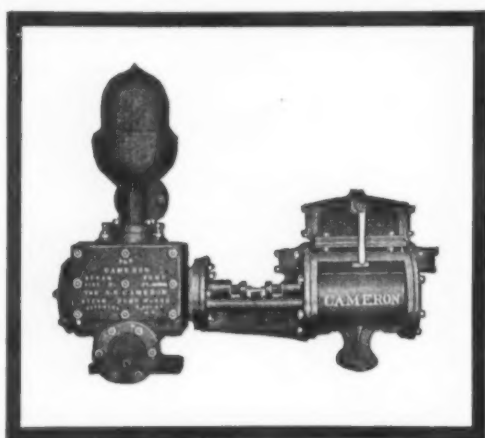
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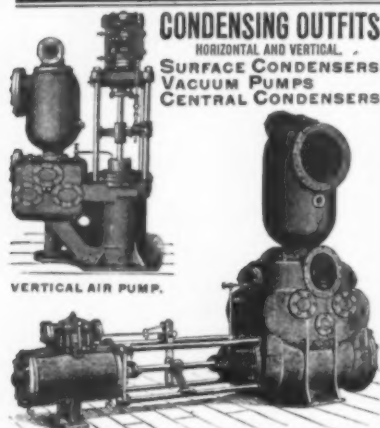
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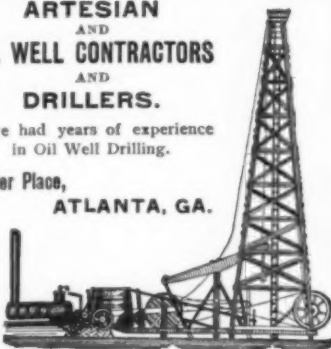
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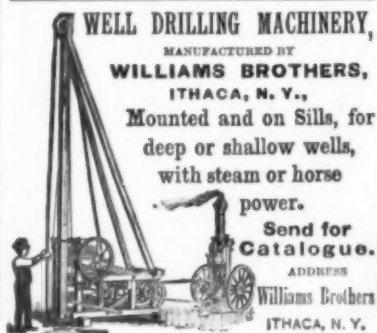


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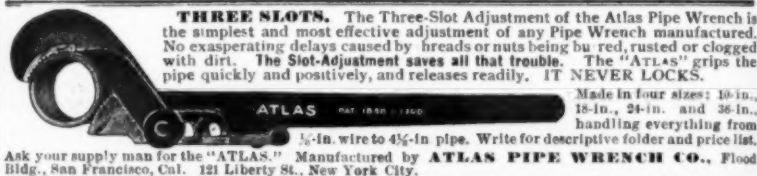


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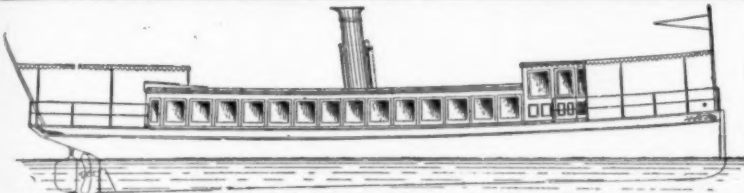
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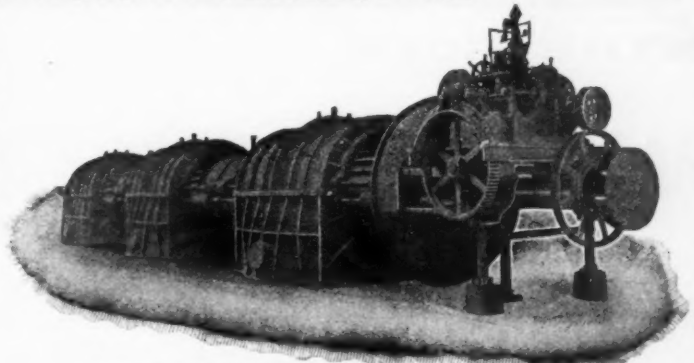
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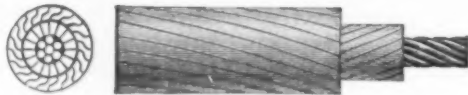
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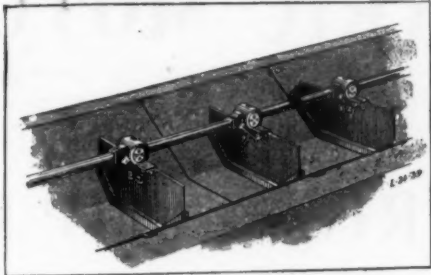
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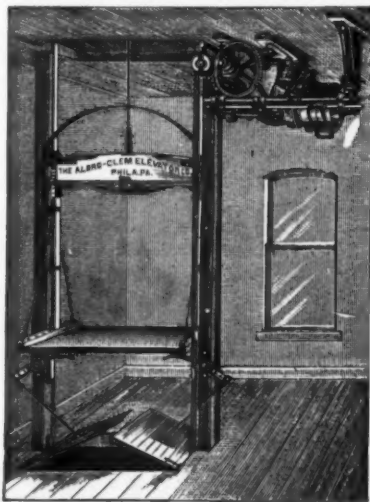
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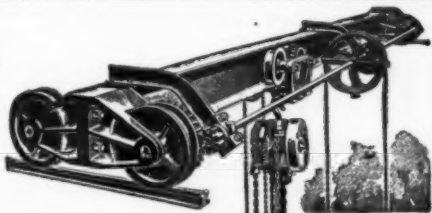
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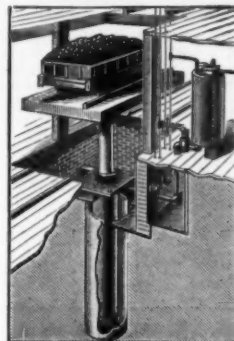
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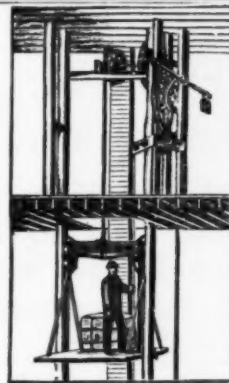
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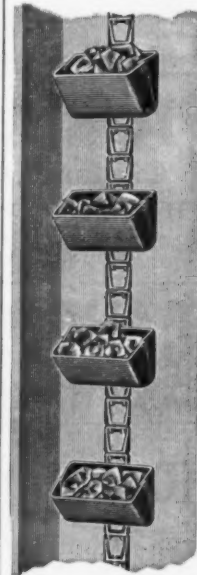
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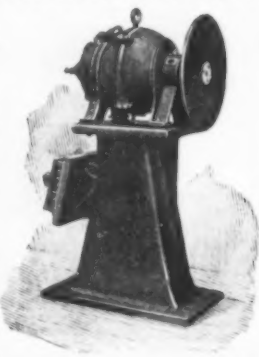
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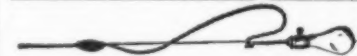
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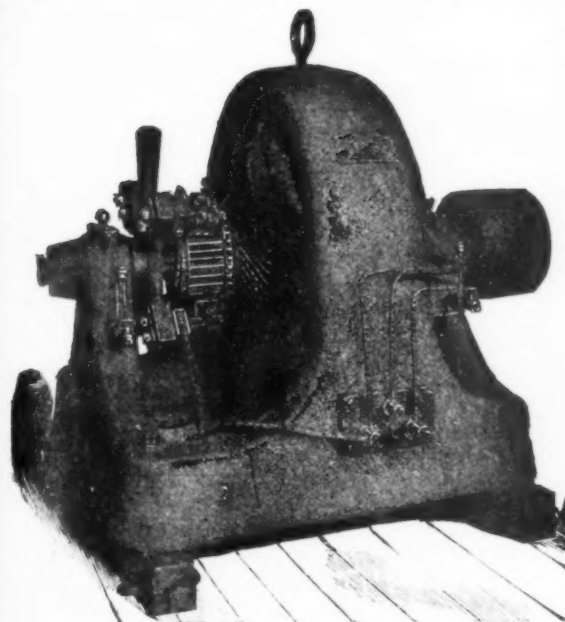
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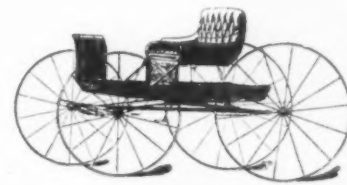
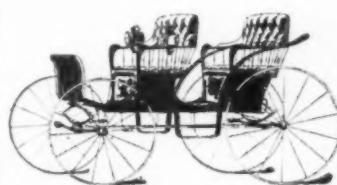
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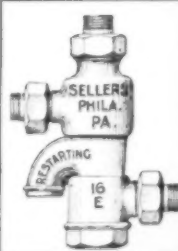
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